Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	ULS File Nos.
	)	
Northstar Wireless, LLC	)	0006670613 and 0008243409
	)	
SNR Wireless LicenseCo, LLC	)	0006670667 and 0008243669
	)	
Applications for New Licenses in the 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz Bands	)	

To: Chief, Wireless Telecommunications Bureau

CONSOLIDATED OPPOSITION OF SNR WIRELESS LICENSECO, LLC AND NORTHSTAR WIRELESS, LLC

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TABLE OF CONTENTS

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SNR Wireless LicenseCo, LLC ("SNR") and Northstar Wireless, LLC ("Northstar" and, together with SNR, "Applicants") submit this consolidated opposition[1] to the comments of VTel Wireless, Inc. ("VTel"), T-Mobile USA, Inc. ("T-Mobile"), and AT&T Services, Inc. ("AT&T").[2]

[1] To facilitate the Commission's processing of the applications and, in light of the consolidated pleadings of the parties filing in this proceeding, SNR and Northstar are submitting a consolidated opposition. This pleading is timely filed. *See* Letter from Paul Malmud, Assistant Chief, WTB, to Ari Q. Fitzgerald, Counsel, SNR, and Mark F. Dever, Counsel, Northstar, ULS File Nos. 0006670667 *et al.* (Aug. 28, 2018) (granting 45-day extension requests); *see also* Letter from Ari Q. Fitzgerald, Counsel, SNR, to Paul Malmud, Assistant Chief, WTB, ULS File Nos. 0006670667, 0008243669 (Aug. 17, 2018); Letter from Mark F. Dever, Counsel, Northstar, to Paul Malmud, Assistant Chief, WTB, ULS File Nos. 0006670613, 0008243409 (Aug. 20, 2018).

[2] *See* Comments of VTel Wireless, Inc., ULS File Nos. 0006670667 *et al.* (filed July 23, 2018) ("VTel Comments"); Comments of T-Mobile USA, Inc., ULS File Nos. 0006670667 *et al.* (filed July 23, 2018) ("T-Mobile Comments"); Comments of AT&T Services, Inc., ULS File Nos. 0006670667 and 0006670613 (filed July 23, 2018) ("AT&T Comments").

I. INTRODUCTION AND SUMMARY.

The record on remand confirms that Applicants have substantially modified their agreements with subsidiaries of DISH Network Corporation ("DISH") and cured every *de facto* control issue the Commission identified in its *2015 Order*.[3] It is undisputed that Applicants have, among other things:

- Converted billions of dollars in indebtedness to DISH to preferred equity, leaving only $500 million owed by each to DISH;
- Terminated their respective Management Services Agreements and Trademark License Agreements with DISH;
- Replaced DISH's original passive investor protection rights with the types of passive investor protection rights expressly identified by the Commission as permissible in *Baker Creek*;[4]
- Eliminated restrictions on their ability to acquire additional spectrum, the obligation to consult with DISH regarding budgets and business plans, and the requirement that their systems be interoperable with those of DISH;
- Eliminated loan prepayment obligations and required interest payments, such that accrued interest is not payable until their loan maturity dates, which they have extended from 7 years to 10 years;
- Eliminated the previous excess cash flow recapture provision and prohibition on their ownership of real property;

[3] *Northstar Wireless, LLC, SNR Wireless LicenseCo, LLC, Applications for New Licenses in the 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 MHz Bands,* 30 FCC Rcd 8887 (2015) ("*2015 Order*"). The Commission has instructed Applicants that the *2015 Order* provides the roadmap for how to cure potential *de facto* concerns and otherwise declined to provide Applicants additional guidance. *See generally Northstar Wireless, LLC, SNR Wireless LicenseCo, LLC, Applications for New Licenses in the 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 MHz Bands*, 33 FCC Rcd 231, 232 ¶ 4 (2018) ("*Remand Order*"). To the extent the Commission still has concerns about the revised agreements, Applicants are ready and willing to discuss or otherwise work with the Commission to understand the Commission's concerns and make changes the Commission believes should be made, as other similarly situated designated entity ("DE") applicants have been permitted to do.

[4] *See Baker Creek Communications, L.P., Memorandum Opinion and Order*, 13 FCC Rcd 18709, 18714-16 ¶ 9 (1998) ("*Baker Creek*").

- Reduced from 10 to 5 years the period during which their manager members may not sell their ownership interests without DISH's consent;

- Removed (i) DISH's right-of-first-refusal on sales of their manager members' ownership interests and on license sales, and (ii) DISH's tag-along rights on the sale of Applicants' manager members' ownership interests;

- Eliminated monetary limits on equipment financing and third-party unsecured debt, and clarified that their management fees are not a salary or any type of cap on their ability to hire or engage additional resources, including personnel, for network construction and operations; and

- Increased from 30 days to 90 days the duration of the put window period after year five of their license terms, added a second put window after year six, added a window after year seven for a fair market value appraisal, and expanded their rights to initiate public offerings.

As demonstrated conclusively in Applicants' initial submissions, these changes have eliminated any question about whether the Applicants have cured.[5] This conclusion is bolstered by filings submitted by the National Association of Black-Owned Broadcasters, Inc. ("NABOB"), an organization that has long advocated for government policies that promote small business ownership, and the Multicultural Media, Telecom and Internet Council ("MMTC"), a non-partisan organization dedicated to promoting and preserving equal opportunity in telecommunications.[6] Both NABOB and MMTC urge the Commission to grant bidding credits to Northstar and SNR because each has cured.

[5] *See* Northstar Wireless, LLC Submission on Remand, ULS File No. 0006670613 (filed June 8, 2018) ("Northstar Submission"); SNR Wireless LicenseCo, LLC Comments in Support of Grant of Bidding Credits, ULS File No. 0006670667 (filed June 8, 2018) ("SNR Comments").

[6] *See* Letter from James L. Winston, President, National Association of Black Owned Broadcasters, Inc., to Marlene H. Dortch, Secretary, FCC, ULS File Nos. 0006670667 *et al.* (filed July 23, 2018) ("NABOB Comments"); Comments of Multicultural Media, Telecom and Internet Council, ULS File Nos. 0006670667 *et al.*, at 2 (filed July 23, 2018) ("MMTC Comments").

The filings by VTel, T-Mobile, and AT&T offer no compelling arguments to deny the bidding credits. Only VTel argues that Applicants have not cured *de facto* control concerns identified in the *2015 Order*. T-Mobile declines to take a position on whether Applicants should receive the bidding credits,[7] and AT&T does not address the cure at all, but merely focuses on what should happen to the defaulted licenses in the event bidding credits are granted.[8]

VTel's claims that Applicants' revised agreements fail to cure the *de facto* control issues identified by the Commission are entirely unpersuasive. First, although Applicants have reduced their indebtedness to DISH *by over 90 percent* and secured substantial additional flexibility with respect to the remaining debt, VTel asserts that their liability to DISH "will actually be *greater than* the amount of indebtedness either entity would have incurred under the original credit agreements with DISH."[9] This is preposterous and based on *fundamentally and mathematically flawed* calculations caused by VTel's use of incorrect starting balances. Applicants provide the correct calculations in the Appendix attached hereto, which demonstrate that Applicants will fare far better, not worse, than under their previous arrangements.

Along similar lines, VTel argues that the conversion of Applicants' debt to preferred equity financially harms Applicants because they "will no longer be able to reduce their taxable income by a factor of the interest paid to DISH."[10] This argument disregards the basic economic realities of a network start-up. License amortization, depreciation of network build-out, and initial operating losses all make it extremely unlikely that Applicants, or any communications

[7] *See* T-Mobile Comments.

[8] *See* AT&T Comments.

[9] VTel Comments at 18 (footnote omitted).

[10] *Id.* at 18.

network operator start-up for that matter, would be able to take advantage of an interest tax deduction during the relevant period.

Further undermining its credibility, VTel declines to acknowledge, much less refute, the substantial changes Applicants made to their agreements with DISH.

The weakness of VTel's arguments is also demonstrated by recent Wireless Telecommunications Bureau ("Bureau") actions. Since the *2015 Order* was issued, the Bureau has granted several applications for bidding credits in circumstances affording passive investors as much, or *more,* influence as DISH has here.[11] These actions confirm that VTel's arguments

[11] Chairman Ajit Pai has made clear that the Commission has continued to follow its long-standing practice to first reach out to an applicant for DE benefits if it has concerns regarding the applicant's organizational structure, contractual provisions, or other application matters, and then work with the applicant to ensure that the specific concerns are addressed through agreement revisions or supplements to the application. *See* Chairman Ajit Pai, Responses to Questions for the Record, U.S. House of Representatives Committee on Energy and Commerce, Subcommittee on Communications and Technology, "Hearing on Oversight of the Federal Communications Commission," Response to Question 2.b from Rep. Clark (Aug. 31, 2018), *available at* https://bit.ly/2O3FiR0 ("DEs who applied for Commission licenses and bidding credits before the D.C. Circuit's ruling will receive similar opportunities to cure control issues."). The Bureau's recent actions with respect to two 600 MHz applicants, Bluewater Wireless II, L.P. ("Bluewater") and Omega Wireless, LLC ("Omega"), confirm the inconsistent treatment of Applicants from other DE applicants. *See* E-mail from Thomas Gutierrez, Counsel, Bluewater, to Jonathan Campbell, Broadband Division, (June 28, 2017, 11:01 AM) (FOIA Control No. 2018-000800) (establishing agenda for upcoming call that includes discussion of limited partners' right to remove general partner for not devoting sufficient time to the partnership); E-mail from Thomas Gutierrez, Counsel, Bluewater, to Sandra Danner, Madelaine Maior, and Blaise Scinto, Broadband Division (May 25, 2018, 1:08 PM) (FOIA Control No. 2018-000800) (forwarding to FCC the proposed revisions to limited partnership agreement to address items outlined in FCC correspondence to Bluewater from May 21, 2018); E-mail from Sandra Danner, Broadband Division, to Tom W. Davidson, Outside Counsel, Omega (June 6, 2018, 11:50 AM) (FOIA Control No. 2018-000802) (scheduling call to discuss Omega's proposed responses to FCC letter inquiring about the rights of non-controlling managers and other corporate governance issues); *see also* Letter from Blaise Scinto, Chief, Broadband Division, to Thomas Gutierrez, Counsel, Bluewater, ULS File No. 0007754927 (filed May 21, 2018); Letter from Thomas Gutierrez, Counsel, Bluewater, to Blaise Scinto, Chief, Broadband Division, ULS File No. 0007754927 (filed June 18, 2018); Letter from Blaise Scinto, Chief, Broadband Division, to Tom W. Davidson, Outside Counsel, Omega, ULS File No. 0007754732 (filed June 4, 2018).

lack merit and Applicants have more than sufficiently cured any concerns regarding *de facto* control.

Second, VTel argues that the Commission should establish and impose new and novel theories of *de facto* control beyond those articulated in the *2015 Order* in addressing Applicants' cure submissions. For example, VTel argues that Applicants should be required to provide a business plan or proof of the ability to raise money for buildout. VTel also urges the Commission to fault Applicants for purchasing "a patchwork of licenses" instead of licenses that would have given each company a nationwide footprint. These considerations have never been relevant to the Commission's analysis of *de facto* control, and the Commission cannot adopt these or any other new *de facto* control standards here. Doing so would be a clear due process violation.

In any event, these points raised by VTel fail on their merits—they are not evidence of *de facto* control by DISH. Each Applicant has both the capability and incentive to deploy wireless services; each has the ability to obtain funding from parties other than DISH; and the revised agreements are demonstrably in each Applicant's financial interests.

Third, VTel argues that Applicants' bidding conduct was inconsistent with the Commission's rules and *de facto* control standards. These arguments, however, represent an improper collateral attack on the *2015 Order* and are thus barred under Section 402(h) of the Communications Act. The *2015 Order* found that Applicants' bidding behavior did not violate the Commission's rules and was not inherently indicative of *de facto* control.[12] On appeal, the

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Such disparate treatment is contrary to law. *See Melody Music, Inc. v. FCC*, 345 F.2d 730, 731-32 (D.C. Cir. 1965) (holding that the FCC must provide similarly situated parties with the same treatment or must explain its reasons for treating such parties differently).

[12] *2015 Order* at 8931-32.

Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") expressly considered the parties' bidding conduct and still ordered the Commission to afford Applicants an opportunity to negotiate a cure—an illogical mandate to have issued if the court deemed the bidding behavior incurably problematic. Consistent with this mandate, the Commission's *Remand Order* did not seek any comment on bidding behavior.[13] And, just a few months ago, the Commission itself told the Supreme Court that Applicants could cure the Commission's *de facto* control concerns, stating that "[i]f petitioners successfully amend their agreements with DISH to eliminate DISH's *de facto* control and affiliate status, the dispute in this case will have no continuing practical importance."[14]

Fourth, VTel claims that guarantees associated with Applicants' default payments demonstrate DISH's *de facto* control. Among other things, the default payments and associated penalties, as well as the guarantees, were induced by the Bureau, which expressly stated in a binding written decision (now final) that the DISH guarantees would *not* be viewed as evidence of *de facto* control. Indeed, VTel's arguments are essentially an effort to use this remand process to re-litigate aspects of Applicants' relationships with DISH that the Commission was aware of and did not identify in the *Remand Order* as requiring a cure. In denying eleven separate requests from Applicants to meet with the Commission to secure guidance on the steps necessary to cure the *de facto* control issues, the Commission has stated that the *2015 Order*

[13] *See generally Remand Order*.

[14] Brief for the Respondents in Opposition at 21, *SNR Wireless License Co. v. FCC*, Sup. Ct. No. 17-1058 (May 2018). The U.S. Department of Justice has also recently stated to the court overseeing the VTel False Claims Act case that the FCC cure proceeding is limited to "whether and how [the Applicants] can alter their relationship with [DISH] so as to entitle Northstar and SNR to the bidding credits for 'very small businesses' that were previously denied." United States' Statement of Interest at 1 (Oct. 10, 2018), *United States ex rel. Vermont National Telephone Co. v. Northstar Wireless, L.L.C. et al.*, Civ. Act. No. 15-00728(CKK) (D.D.C. filed May 13, 2015).

"comprehensively explain[ed]" the agency's *de facto* control concerns.[15] The Commission cannot now conclude differently without violating the Applicants' fair notice rights.

Separate and apart from the lack of merit in VTel's various arguments, the Commission should dismiss without consideration VTel's comments, as well as the filings of AT&T and T-Mobile, on procedural grounds. AT&T and T-Mobile did not timely participate in Applicants' underlying application proceedings, and Section 402(h) of the Communications Act precludes their involvement on remand.[16] VTel failed to submit an affidavit supporting the factual bases of its arguments, as required under Section 309(d)(1), and the Commission therefore should dismiss its comments.

Finally, having cured all concerns identified in the *2015 Order*, Applicants are entitled to, among other things, all of the licenses on which they selectively defaulted as a result of the Commission's decision. But for the Commission's now-remanded decision to deny Applicants the right to cure beforehand, they would have been entitled to acquire, using bidding credits, all of the licenses for which Applicants were high bidders. As judicial and Commission precedent make clear, the proper means of restoring the *status quo ante* is to reinstate and grant the applications for those licenses.

II. THE RECORD ON REMAND CONFIRMS THAT APPLICANTS HAVE CURED ALL *DE FACTO* CONTROL CONCERNS.

As demonstrated in their initial cure submissions, Applicants have renegotiated their agreements with subsidiaries of DISH and cured every *de facto* control issue the Commission

[15] *See Remand Order* at 232.

[16] 47 U.S.C. § 402(h).

identified in its *2015 Order*.[17] The effectiveness of Applicants' restructuring efforts is confirmed by filings submitted by NABOB and MMTC.[18]

VTel, T-Mobile, and AT&T offer no compelling arguments to the contrary. VTel is the only entity that argues that Applicants have not cured the *de facto* control concerns identified in the *2015 Order*. VTel's claims, however, are entirely unpersuasive, as they fail to acknowledge the substantial changes in the agreements between Applicants and DISH, instead advocating for a new standard of *de facto* control that cannot be applied here.

A. The Conversion of Indebtedness to Preferred Equity Significantly Enhances Each Applicant's Respective Financial Flexibility.

The bulk of VTel's comments focus on the conversion of Applicants' indebtedness to DISH to preferred equity. VTel asserts that Applicants' liability to DISH "will actually be *greater than* the amount of indebtedness either entity would have incurred under the original credit agreements with DISH."[19] VTel argues further that the conversion of debt to preferred equity is financially harmful because "Northstar and SNR will no longer be able to reduce their taxable income by a factor of the interest paid to DISH."[20] These arguments have no merit.

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[17] *See generally* Northstar Submission; SNR Comments. Nevertheless, Applicants expressly preserve their arguments that, at the time they applied for bidding credits, they lacked fair notice of the standard applied in the *2015 Order*. These amendments also do not evince *de facto* control when compared with the Bureau-level decisions upon which Applicants based their initial agreements with DISH.

[18] *See* NABOB Comments; MMTC Comments.

[19] VTel Comments at 18.

[20] *Id.* at 18. In a footnote, VTel also asserts that it is "noteworthy that the changes Northstar and SNR negotiated in an attempt to cure DISH's *de facto* control are substantively identical (as are their underlying contracts)." *Id.* at n.41. Applicants have been clear that the vast majority of provisions in their agreements were modeled on—and virtually identical to—the terms of the Denali Spectrum License, LLC transaction, which the Bureau approved after extensive negotiation with the parties involved, and other past approved agreements. Here, Applicants

To address concerns regarding *de facto* control, Applicants each converted billions of dollars in indebtedness to DISH to preferred equity, leaving only $500 million owed.[21] These conversions decreased each Applicant's debt obligations to DISH by over 90 percent. Specifically, DISH exchanged over $6.9 billion of the debt owed to it for an equivalent amount of preferred equity in Northstar[22] and exchanged over $5 billion of debt owed to it for an equivalent amount of preferred equity in SNR.[23] Unlike debt, preferred equity has no maturity date.[24] Applicants are not required to make payment to DISH on the full amount of DISH's preferred equity interests unless and until there is a liquidation or a deemed liquidation event,

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have addressed a common set of Commission concerns without the informative negotiations the Commission has historically engaged in with other similarly situated applicants.

[21] *See* Third Amended and Restated Limited Liability Company Agreement of Northstar Spectrum, LLC, entered into as of June 7, 2018, by and between Northstar Manager, LLC and American AWS-3 Wireless II L.L.C. § 2.2(e) ("Revised Northstar LLC Agreement"); Third Amended and Restated Limited Liability Company Agreement of SNR Wireless HoldCo, LLC, entered into as of June 7, 2018, by and between SNR Management, John Muleta and American AWS-3 Wireless III L.L.C. § 2.2(f) ("Revised SNR LLC Agreement").

[22] As of March 31, 2018, DISH exchanged $6,870,492,660 of the amounts outstanding and owed to it for Class A Preferred Interests. *See* Revised Northstar LLC Agreement § 2.2(e); Third Amended and Restated Credit Agreement, entered into as of June 7, 2018, by and among American II, Northstar Wireless, and Northstar § 2.2(g)(ii) ("Revised Northstar Credit Agreement"); *see also* Northstar Submission at 13.

[23] As of March 31, 2018, DISH exchanged $5,065,414,940 of the amounts outstanding and owed to it for Class A Preferred Interests. *See* Revised SNR LLC Agreement § 2.2(f); Third Amended and Restated Credit Agreement, entered into as of June 7, 2018, by and among American III, SNR LicenseCo and SNR Holdco § 2.2(h)(ii) ("Revised SNR Credit Agreement"); *see also* SNR Comments at 11.

[24] The Commission has long held that a critical factor in determining whether debt obligations should be treated as equity depends on "whether there is a written unconditional promise to repay the money on demand." *See, e.g.*, *Fox Television Stations, Inc.*, Second Memorandum Opinion and Order, 11 FCC Rcd 5714, 5720 ¶ 16 (1995) ("*Fox Television Stations, Inc*."); *NextWave Personal Communications, Inc.*, Memorandum Opinion and Order, 12 FCC Rcd 2030, 2049 ¶ 43 (1997) (citing *Fox Television Stations, Inc*.).

such as a merger, consolidation, or similar transaction, which may never happen.[25] These changes individually and in the aggregate provide Applicants with substantially greater financial flexibility than they had prior to the *2015 Order*.

With regard to the remaining $500 million in debt owed to DISH by each Applicant, the parties agreed to additional modifications to their respective agreements, which provide each Applicant with greater financial flexibility in meeting its debt obligations. Specifically, the loan maturity date for each Applicant was extended from 7 to 10 years,[26] and the interest rate was reduced from 12 percent to 6 percent.[27] The reductions to the amount of indebtedness to DISH, the extensions of the debt maturity dates, and the reductions to the debt interest rates are consistent with or improvements upon structures that have recently garnered auction bidding credits and are certainly not changes designed to keep debtors in a "locked cage," as VTel baselessly alleges.[28]

1. Applicants' respective total liability to DISH after the preferred equity swap is less than before the transaction.

Further, VTel's assertion that Applicants' "liability to DISH under the preferred equity swap will actually be *greater than* the amount of indebtedness either entity would have incurred under the original credit agreements with DISH"[29] is based on fundamentally flawed

[25] *See* Revised Northstar LLC Agreement § 13.3; Revised SNR LLC Agreement § 13.3; *see also* Northstar Submission at 14-15; SNR Comments at 3, 12.

[26] *See* Revised Northstar Credit Agreement §§ 1.1 (Definitions), 2.2(g)(ii); Revised SNR Credit Agreement §§ 1.1 (Definitions), 2.2(h)(ii); *see also* Northstar Submission at 14-15; SNR Comments at 3, 14.

[27] Revised Northstar Credit Agreement § 2.3; Revised SNR Credit Agreement § 2.3; *see also* Northstar Submission at 14; SNR Comments at 3, 13.

[28] *See* VTel Comments at 4.

[29] *See* VTel Comments at 18.

mathematical calculations. In short, VTel inappropriately uses different starting balances in its comparison between the "No Restructuring Scenario," which represents the original debt and financing structure, and the "Restructuring Scenario," which takes account of the preferred equity swap that was effective March 31, 2018.[30]

Specifically, in the No Restructuring Scenario, VTel starts Year 1 with a debt balance of $5 billion for Northstar and $3.6 billion for SNR, the original loan balances on March 2, 2015.[31] However, in the Restructuring Scenario, VTel inexplicably starts Year 1 with a starting balance of $7.4 billion for Northstar and $5.6 billion for SNR, which were the outstanding obligations as of March 31, 2018 when the restructuring took place. As a result of using these erroneous figures, VTel incorrectly includes 3 years of additional interest from the start, and *overstates* by $3.2 billion DISH's preferred equity interest in Northstar at the ten-year anniversary of the loan, and similarly *overstates* by $2.4 billion DISH's preferred equity interest in SNR.[32] Accordingly,

[30] In addition to this error, VTel makes several other mistakes, such as failing to pro-rate interest periods and not accounting for the change in the preferred coupon rate from 12 percent to 8 percent implemented on June 7, 2018.

[31] *See* VTel Comments at Appendix 2. More precisely, the amount DISH loaned to SNR as of March 2, 2015 was approximately $3.503 billion (not $3.6 billion), but the difference is immaterial for this analysis and does not change the fact that VTel's analysis is flawed. *See* DISH NETWORK CORPORATION, Annual Report at 10 (Form 10-K) (Feb. 23, 2015).

[32] The overstatements of $3.2 billion for Northstar and $2.4 billion for SNR were as of March 2, 2025, the ten-year anniversary of the original loans from DISH in the VTel scenario, which uses March 2, 2015 as the Initial Grant Date. The correct Initial Grant Date is October 27, 2015; but that was not used for the comparisons to the VTel calculations for consistency. The detailed comparison calculations for Northstar can be found in Table 1A, 2A and 3A in the Appendix, and the specific comparison for the preferred equity interests on March 2, 2025 can be found in Table 3A. Likewise, the detailed comparison calculations for SNR can be found in Table 1B, 2B and 3B in the Appendix, and the specific comparison for the preferred equity interests on March 2, 2025 can be found in Table 3B. *See also,* Revised Northstar Credit Agreement §§ 1.1 (Definitions); Revised SNR Credit Agreement §§ 1.1 (Definitions).

it is no wonder that VTel came to the totally wrong conclusion about the impact of the preferred equity swap.[33]

The attached Appendix provides the correct analysis. As shown, the debt restructuring reduced SNR's financial obligations to DISH by $755 million in the event of a sale or dissolution at the end of 2020.[34] Similarly, the debt restructuring reduced Northstar's financial obligations to DISH by roughly $1 billion at the end of 2020.[35]

In short, no spreadsheet calculations are required to show that the changes to the agreements cannot logically be detrimental to SNR or Northstar. The much lower debt amount, the lower preferred equity dividend rate (now 8 percent versus 12 percent previously),[36] the lower interest rate on the remaining $500 million in debt (now 6 percent versus 12 percent previously as debt), the subordinate nature of liquidation priority provided under DISH's preferred equity,[37] and the lack of participation rights[38] afforded to DISH as the preferred equity

[33] For example, VTel incorrectly claims that under the new capital structure it is likely that SNR's and Northstar's total liabilities to DISH when they can first exercise their put right in 2020 will increase by 21 percent and 26 percent, respectively, when in fact those liabilities decrease as demonstrated herein. *See* VTel Comments at 5.

[34] For SNR, total obligations due to DISH as of December 15, 2020 are reduced from $7.7 billion in the No Restructuring Scenario to $6.9 billion (of which $6.3 billion comes from the preferred equity holdings) in the Restructuring Scenario. December 15, 2020 is the mid-point of the first period within which SNR can exercise its put right. *See* Exhibit C, Table 2B.

[35] For Northstar, total obligations due to DISH as of December 15, 2020 are reduced from $10.2 billion in the No Restructuring Scenario to $9.2 billion (of which $8.6 billion comes from the preferred equity holdings) in the Restructuring Scenario. December 15, 2020 is the mid-point of the first period within which Northstar can exercise its put right. *See* Exhibit C, Table 1B.

[36] *See* Revised Northstar LLC Agreement § 2.2(e); Revised SNR LLC Agreement § 2.2(f); *see also* Northstar Submission at 14; SNR Comments at 3, 11.

[37] *See* Revised Northstar LLC Agreement § 13.3; Revised SNR LLC Agreement § 13.3. Indeed, whether there is subordination over any indebtedness is the second factor in the Commission's test to determine whether a financial interest is debt or equity. *See Fox Television Stations, Inc.* at 5720.

holder all contribute to providing each Applicant with more financial flexibility going forward and a much lower financial obligation to DISH during the now multiple time periods when the put right can be exercised.

Finally, VTel argues that the conversion of debt to preferred equity will dilute Applicants' ownership interests.[39] This statement is incorrect. The new preferred equity has no ownership interest in the common equity.[40] Northstar Manager, LLC ("Northstar Manager") owns a 15 percent common equity interest in Northstar and SNR Wireless Management, LLC ("SNR Manager") owns a 15 percent common equity interest in SNR. Neither is diluted as a result of the issuance of the new preferred equity.[41]

2. Applicants face no adverse tax consequences resulting from the conversion.

There also is no merit to VTel's argument that the conversion of debt to preferred equity is financially harmful because Applicants "will no longer be able to reduce their taxable income by a factor of the interest paid to DISH."[42] Applicants, like companies in any capital-intensive start-up scenario, are largely shielded from income tax payments for the foreseeable future. License amortization, depreciation of network build-out, and initial operating losses make it extremely unlikely that Applicants, or any communications network operator start-up for that matter, would be able to take advantage of an interest tax deduction. In contrast, Northstar will

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[38] *See* Revised Northstar LLC Agreement § 2.2(e); Revised SNR LLC Agreement § 2.2(f); *see also* Northstar Submission at 13-14; SNR Comments at 3, 11.

[39] *See* VTel Comments at 9-10.

[40] *See* Revised Northstar LLC Agreement § 2.2(e); Revised SNR LLC Agreement § 2.2(f).

[41] See Table 3A and Table 3B in the Appendix (showing the common equity ownership distribution for SNR and Northstar does not change as a result of the new preferred equity).

[42] VTel Comments at 18.

save $1 billion in interest—net of dividends on the preferred shares—by 2020 as a result of the restructured debt, and SNR will save $755 million in interest, as demonstrated above.[43] Under no circumstances can this be characterized as "contrary to [Applicants'] own business interests."[44]

B. VTel Ignores Other Critical Aspects of Applicants' Restructured Relationships With DISH.

In addition to the substantial restructuring of the debt, Applicants made substantial additional changes to remedy the Commission's concerns about Applicants' ability to pursue their individual business objectives. Among other things, Applicants terminated their respective Management Services Agreements and Trademark License Agreements with DISH.[45] Applicants replaced DISH's passive investor protection rights with the types of passive investor protection rights expressly identified by the Commission as permissible in *Baker Creek*[46] and affirmed by the Commission as permissible in the *2015 Order*.[47] Applicants eliminated restrictions on their ability to acquire additional spectrum, the obligation to consult with DISH regarding budgets and business plans, and the requirement that their systems be interoperable with those of DISH.[48] Applicants eliminated loan prepayment obligations and required interest payments, such that accrued interest is not payable until the loans' maturity dates, which

[43] *See supra* notes 34 and 35 and accompanying text.

[44] VTel Comments at 17.

[45] SNR Comments at 9-10; Northstar Submission at 11-12.

[46] *See Baker Creek* at 18715; *see also* SNR Comments at 10-11; Northstar Submission at 17-19.

[47] *2015 Order* at 8913.

[48] SNR Comments at 10, 17; Northstar Submission at 19-20.

Applicants and DISH have extended from 7 years to 10 years.[49] Applicants also eliminated the previous excess cash flow recapture provision and prohibition on them owning real property.[50]

Further, Applicants reduced from 10 to 5 years the period during which their manager members must obtain DISH's consent before selling their ownership interests.[51] Applicants also removed (i) DISH's right-of-first-refusal on sales of their manager member's ownership interests and on license sales, and (ii) DISH's tag-along rights on the sale of Applicants' manager members' ownership interests.[52] They eliminated monetary limits on equipment financing and third-party unsecured debt[53] and clarified that their management fees are not a salary or any type of cap on their ability to hire or engage additional resources, including personnel, for network construction and operations.[54] Finally, Applicants increased from 30 days to 90 days the duration of the put window period after year five, added a second put window after year six, added a window after year seven for a fair market value appraisal, and expanded their rights to initiate public offerings.[55] VTel disputes none of this and, thus, cannot credibly argue that Applicants' changes to their respective agreements fail to cure all of the *de facto* control concerns the Commission articulated in the *2015 Order*.

[49] SNR Comments at 13-14; Northstar Submission at 14-15.

[50] SNR Comments at n.74; Northstar Submission at 15.

[51] SNR Comments at 14-15; Northstar Submission at 16.

[52] SNR Comments at 14-15; Northstar Submission at 16.

[53] SNR Comments at 16-17; Northstar Submission at 27.

[54] SNR Comments at 18; Northstar Submission at 22-23.

[55] SNR Comments at 4, n.78; Northstar Submission at 16.

C. Recent Bureau Actions Further Contradict VTel's Arguments.

1. Applications for bidding credits granted following the *2015 Order* featured stronger investor protections and greater levels of indebtedness than those provided in Applicants' revised agreements.

Since release of the *2015 Order*, the Bureau has granted several applications for bidding credits that explicitly allow contractual passive investor protections that are consistent with, or provide more favorable protections than, Applicants' revised agreements provide to DISH. These approved applications also involved levels of indebtedness to large investors significantly greater, as a percentage of total winning bids, than the levels of indebtedness to DISH that Applicants now have.

For example, in December 2016, the Bureau granted the bidding credit application of 2014 AWS Spectrum Bidco Corporation ("2014 AWS Bidco").[56] 2014 AWS Bidco's application featured substantially more and stronger passive investor protection rights, including consent rights on changes to business plans, consent rights on capital expenditures in excess of 115 percent of the amount specifically included in the annual budget, consent rights over liens in excess of $500,000, and the perpetual right to approve transfers or assignments of equity interests, which Applicants' revised agreements do not provide.[57] In addition, 2014 AWS Bidco's level of indebtedness to its passive investor Terrestar Corporation ("Terrestar") was more than 75 percent of its gross winnings in Auction 97.[58] This level of indebtedness is

[56] *Wireless Telecommunications Bureau Grants AWS-3 Licenses in the 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz Bands*, Public Notice, 31 FCC Rcd 12745 (2016) ("*2014 AWS Bidco Grant*").

[57] *See, e.g.*, 2014 AWS Bidco Amended and Restated Limited Partnership Agreement §§ 5.4(a), (b), (c), (e), (g), (h), (k), (n), (p), (q), (r), (s), (t), 6.1(a), 8.1(a)(i), 9.2; *see also* Northstar Submission at 29; SNR Comments at 10-11.

significantly greater on a percentage basis than that of Northstar and SNR – Northstar is now indebted to DISH for 6 percent of total gross winning bids in Auction 97, while SNR is indebted to DISH for 9 percent of total gross winning bids.[59]

In July 2016, the Bureau granted the bidding credit application of Advantage Spectrum, L.P. ("Advantage Spectrum").[60] Advantage Spectrum also offered more and stronger passive investor protections to United States Cellular Corporation ("USCC") than Applicants now provide to DISH, including consent rights on business plans, consent rights on capital expenditures in excess of 110 percent of the amount specifically contained in the annual budget, the incurrence of any indebtedness above $500,000 unless approved for in the business plan, and approval rights on transfers of equity interests that last until buildout is complete.[61] Advantage Spectrum's level of indebtedness to USCC was significantly higher on a percentage basis than that of Applicants: more than 60 percent of its gross winning bids in Auction 97.[62]

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[58] *See* 2014 AWS Bidco Second Amended and Restated Promissory Note, Amendment No. 1 (evidencing Terrestar's $292,340,000 in loans to 2014 AWS Spectrum Bidco). 2014 AWS Bidco's net winning bids totaled $291,810,000, which includes a 25 percent bidding credit; its gross winning bids were $389,080,000. *See Auction of Advanced Wireless Services (AWS-3) Licenses Closes; Winning Bidders Announced for Auction 97,* Public Notice, 30 FCC Rcd 630, Attachment B at 1 (2015) ("*Auction 97 Winning Bidders Announced*").

[59] Northstar was the winning bidder for 345 of the 1614 licenses being auctioned in Auction 97, with a total of $7,845,059,400 in gross provisionally winning bids. The $500 million in remaining debt is 6.37 percent of gross winnings bids. SNR was the winning bidder for 357 of the 1614 licenses being auctioned in Auction 97, with a total of $5,482,364,300 in gross provisionally winning bids. The $500 million in remaining debt is 9.12 percent of gross winning bids.

[60] *Wireless Telecommunications Bureau Grants AWS-3 Licenses in the 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz Bands*, Public Notice, 31 FCC Rcd 7129 (2016) ("*Advantage Spectrum Grant*").

[61] *See, e.g.*, Advantage Spectrum LP Agreement §§ 5.3(a), (d), (e), (f), (g), (h), (i), (j), 9.1, 15.1; *see also* Northstar Submission at 29; SNR Comments at 10-11.

[62] *See* Advantage Spectrum, L.P. Loan and Security Agreement, Amendment No. 1 (evidencing USCC's $272,448,600 in loans to Advantage Spectrum). Advantage Spectrum's net winning

Despite the fact that 2014 AWS Bidco and Advantage Spectrum were both awarded bidding credits after the Commission released the *2015 Order*, VTel claims that, because these were unpublished Bureau decisions, it is "irrelevant" how Applicants' revised agreements compare to those of 2014 AWS Bidco and Advantage Spectrum.[63] Such a claim must be rejected.

The D.C. Circuit was careful to recognize that the Commission's purported latitude to reject Bureau-level precedent does not make Bureau decisions irrelevant. In fact, the D.C. Circuit suggested that such decisions can be critical in determining whether a regulated entity may be penalized where, as in this case, the regulator's rules and decisions are unclear. As the D.C. Circuit recognized, "where a standard itself does not give notice of the conduct it prohibits, a regulated entity cannot be *punished* for violating those standards."[64] Indeed, the D.C. Circuit itself engaged in a substantive comparison of Applicants' agreements to those in previous Bureau-level decisions for the purpose of determining whether the Commission had provided sufficient notice to punish them by denying their requested bidding credits without allowing Applicants to cure any *de facto* control problems that the Commission had identified.[65] The D.C. Circuit explained that "[w]hen we consider whether the FCC's *de facto* control rules were clear enough that petitioners should have expected that, were they to fall short they would be penalized for default and denied an opportunity to cure . . . *we will take note of the way that*

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bids totaled $338,304,000, which includes a 25 percent bidding credit; its gross winning bids were $451,072,000. *See Auction 97 Winning Bidders Announced,* Attachment B at 1.

[63] VTel Comments at n.27.

[64] *SNR Wireless LicenseCo v. FCC*, 868 F. 3d 1021, 1039 (D.C. Cir. 2017) ("*SNR v. FCC*").

[65] *Id.* at 1040-43.

Wireless Bureau staff seemed to interpret those rules."[66] Thus, even if the Commission rejected the Bureau's 2014 AWS Bidco and Advantage Spectrum decisions—which it has not—the Commission may not *penalize* Applicants for following those decisions unless Applicants had fair notice that the Commission would reject them.[67]

In addition, although the D.C. Circuit concluded that the Commission is not bound by unreviewed decisions of the Bureau,[68] the Bureau is clearly bound by the Commission's *2015 Order*. Subsequent Bureau decisions, especially those issued on the heels of the *2015 Order*, must be read as consistent with the *2015 Order* and cannot be lightly disavowed.[69] Disregard for those Bureau decisions, issued after the *2015 Order*, would smack of procedurally arbitrary, ends-driven decision-making and clearly violate due process.[70] Regulated entities should be able

[66] *Id.* at 1040 (emphasis added).

[67] The D.C. Circuit prohibits the imposition of penalties unless Applicants could have determined, with "ascertainable certainty," that the Commission's rules require more than the Bureau understood. *Gen. Elec. Co. v. EPA*, 53 F.3d 1324, 1329 (D.C. Cir. 1995) ("*GE v. EPA*").

[68] *SNR v. FCC* at 1040-41.

[69] *See generally Echostar Satellite Operating Corporation Spectrum Five, LLC*, Memorandum Opinion and Order, 23 FCC Rcd 3252 (2008) (stating that the Bureau properly acted within the scope of its delegated authority because the "Bureau followed established procedures and its actions were consistent with Commission guidance"); *Wireline Competition Bureau Releases Alternative Connect America Cost Model Version 1.01 and Illustrative Results for Potential Use in Rate-Of-Return Areas*, Public Notice, 30 FCC Rcd 2067 (2015) (stating that the Bureau, following the Commission's actions in another proceeding, correctly updated broadband requirements to the minimum speed standard of 10/1 Mbps).

[70] *See Timpinaro v. SEC*, 2 F.3d 453, 460 (D.C. Cir. 1993) (finding agency action to be unconstitutionally vague where conduct is circumscribed by a set of "factors [that] are subject to seemingly open-ended interpretation," and that this uncertainty is "all the greater when these mysteries are considered in combination, according to some undisclosed system of relative weights"); *Satellite Broadcasting Co., Inc. v. FCC*, 824 F.2d 1, 4 (D.C. Cir. 1987) (holding that fair notice is required as a matter of administrative law whenever an agency "wishes to use [its] interpretation" of vague or ambiguous rules "to cut off a party's right.").

to presume that the Bureau follows Commission precedent in assessing how to comply with Commission decisions.

2. DISH's equity interest in Applicants remains less than the equity interest of passive investors in other post-*2015 Order* approved applicants.

Bureau decisions following the *2015 Order* further confirm that DISH's ownership interest in the Applicants does not confer *de facto* control. The Bureau granted 2014 AWS Bidco's application for bidding credits despite Terrestar holding a *99* percent equity interest in the applicant.[71] Similarly, the Bureau granted Advantage Spectrum's application for bidding credits even though USCC held a 90 percent equity interest in the applicant (in addition to loans that USCC separately made to the controlling designated entity investor that funded the majority of the controlling designated entity's 10 percent equity interest in Advantage Spectrum).[72] More recently, in July 2018, the Bureau approved Omega Wireless's application for bidding credits in the 600 MHz auction, even though its passive investors held a combined 98.15 percent equity interest in Omega.[73]

[71] *See 2014 AWS Bidco Grant* at 12747, Attachment A; *see also* Description of Indirect Ownership Interests in 2014 AWS Bidco, 2014 AWS Bidco, ULS File No. 0006701155 (filed Mar. 10, 2015) (stating that Terrestar Corporation holds indirectly 99 percent of the equity ownership of 2014 AWS Bidco).

[72] *See Advantage Spectrum Grant* at 7131, Attachment A; *see also* Exhibit 2: Indirect Ownership, Advantage Spectrum, L.P., ULS File No. 0006457325 (filed Oct. 10, 2014) (showing USCC entities controlling a 90 percent stake in Advantage Spectrum).

[73] *See Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses*, Public Notice, DA 18-774, Attachment A (rel. July 26, 2018); *see also* Direct & Indirect Ownership, Omega Wireless, LLC, ULS File No. 0008251033 (filed June 14, 2018).

In each of these cases, non-controlling investors held an equity interest greater than the 85 percent equity interest that DISH holds among all common member interests.[74] For the Commission to find that DISH's increased passive equity stake in Applicants is problematic and indicative of *de facto* control would demonstrate that Applicants are unlawfully being treated differently than other similarly situated applicants.[75]

Moreover, although significant ownership interest is a factor in the Commission's totality of circumstances test for *de facto* control,[76] the Commission's *2015 Order* rejected VTel's argument that the mere percentage of an investor's equity contribution alone is determinative of *de facto* control.[77] VTel provides no basis for ignoring this settled law.

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[74] *See* Exhibit A: Indirect Ownership, Northstar, ULS File No. 0008243351 (filed June 8, 2018) (stating that DISH holds 85 percent of all common member interests in Northstar through American II); *see also* Disclosable Ownership Information, SNR Wireless LicenseCo, LLC, ULS File No. 0008243412 (filed June 8, 2018) (stating that DISH holds 85 percent of all common member interests in SNR through American III).

[75] *See Melody Music, Inc.*, 345 F.2d at 731-32.

[76] *See 2015 Order* at 8890.

[77] *See id.* at 8924; *see also Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures*, Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rulemaking, 15 FCC Rcd 15293, 15325-26 ¶ 65 (2000) (eliminating minimum equity requirements for controlling interests, recognizing that such requirements are "contrary to [the Commission's] goal of providing legitimate small businesses maximum flexibility in attracting passive financing" and because it is not necessary "to ensure appropriate identification of an applicant's controlling interests if the principles of *de jure* and *de facto* control are applied"); *Updating Part 1 Competitive Bidding Rules*, Report and Order, Order on Reconsideration of the First Report and Order, Third Order on Reconsideration of the Second Report and Order; Third Report and Order, 30 FCC Rcd 7493, 7515 ¶ 50 (2015) (rejecting the adoption of a rebuttable presumption that equity interests of 50 percent or more represent *de facto* control of a DE because such a presumption "would run counter to [the Commission's] overall policy goal of providing additional sources of access to capital").

III. VTEL'S PROPOSED NEW *DE FACTO* CONTROL STANDARDS DO NOT WARRANT A FINDING OF *DE FACTO* CONTROL HERE.

A. VTel Improperly Advocates that New *De Facto* Control Standards Apply to Applicants.

Faced with the patent weakness of its arguments, VTel mints entirely new criticisms of Applicants' relationships with DISH. These criticisms, however, lack any foundation in FCC rules or policy.

For example, VTel argues that Applicants do not have a business plan or proof of the ability to raise money.[78] Yet the FCC has never required DE applicants to submit evidence of a business plan or the ability to raise money.[79] Moreover, based on experience and statutory changes, the FCC long ago eliminated license eligibility assessments and subjective "beauty contests" in favor of auctions and license construction deadlines.[80] Congress and the Commission correctly view the high bid in an auction as conclusive evidence that the bidder is in the best position to put the spectrum won to its highest and best use.[81] As such, the Commission

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[78] *See* VTel Comments at 14-17.

[79] *See, e.g.*, 47 C.F.R § 1.2110; *Auction of Advanced Wireless Services (AWS-3) Licenses Scheduled for November 13, 2014; Notice and Filing Requirements, Reserve Prices, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 97*, Public Notice, 29 FCC Rcd 8386, 8411-15 ¶¶ 79-92 (2014). VTel suggests that dicta in the court's decision states that these considerations are relevant to whether the FCC should consider an entity's sale forced. Even if this were true, the FCC itself has not incorporated these considerations into its analysis.

[80] *See, e.g.*, Timothy C. Salmon, *Spectrum Auctions by the United States Federal Communications Commission*, at 2-6 (2002), *available at* https://bit.ly/2Q14dSH.

[81] *See, e.g.*, Federal Communications Commission, Wireless Telecommunications Bureau, *The FCC Report to Congress on Spectrum Auctions*, at 14 (1997) ("A well designed auction should produce a socially efficient distribution of scarce goods because it awards goods to those willing to pay the highest price. . . . . [T]he competitive bidding process provides incentives for licensees of spectrum to compete vigorously with existing services, develop innovative technologies, and provide improved products to realize expected earnings. In this way, awarding spectrum using competitive bidding aligns the licensees' interests with the public interest in efficient utilization of the spectrum."); *Implementation of Section 6002(B) of the Omnibus*

has rejected comparative processes for license applications—based on the types of showings VTel now conjures—concluding that evaluation of such information is "time consuming and resource intensive from the perspective of both the applicants and the Commission."[82]

VTel also attempts to support its flawed argument that DISH exercised *de facto* control of Applicants by suggesting that Applicants "purchased a patchwork of licenses" instead of licenses that would have given each company a nationwide footprint.[83] However, FCC auction applicants are not required to bid on any particular set of licenses,[84] and the FCC has never found that lack of particular license holdings is relevant to the *de facto* control analysis.

Additionally, SNR's and Northstar's license acquisitions were similar to strategies common among auction participants over the years[85] and were procompetitive, as Applicants have explained previously.[86] Furthermore, economic analysis conducted by Drs. David Salant

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Budget Reconciliation Act of 1993, 31 FCC Rcd 10534, 10574 ¶ 55 (explaining the incentive auction is structured to "allow[] market forces to determine the highest and best use of spectrum" in order for "winning bids for licenses in the forward auction to reflect competitive prices.").

[82] *See FCC Report to Congress on Spectrum Auctions*, Report, WT Docket No. 97-150, FCC 97-353, at 5 (1997); *The Importance of Economic Analysis at the FCC*, Remarks of FCC Chairman Ajit Pai at the Hudson Institute (2017), https://bit.ly/2wKupbU.

[83] *See* VTel Comments at 5, 20-23.

[84] *See, e.g.*, 47 C.F.R. § 1.2110.

[85] *See* Consolidated Opposition of SNR Wireless LicenseCo, LLC to Petitions to Deny, ULS File No. 0006670667, at 61, 69 (filed May 18, 2015) ("SNR Opposition"); *see also* Don Milazzo, *AT&T affiliate SunCom plans wireless debut*, BIRMINGHAM BUS. J. (Jan. 23, 2000), *available at* https://bit.ly/2MPZ6Y2 (describing a joint venture between AT&T and a small regional carrier that held PCS licenses).

[86] *See* SNR Opposition at 61-70; Northstar Wireless, LLC, Opposition to Petitions to Deny, ULS File No. 0006670613, at 63-75 (filed May 18, 2015) ("Northstar Opposition").

and Gary Biglaiser demonstrate that bidders can, and often do, purchase spectrum license portfolios at auction that either have significant coverage gaps and/or are non-contiguous.[87]

Finally, a passive investor's right to agree to the sale of the company in which it has invested—which VTel now questions in the cases of SNR and Northstar[88]—is an established passive investor protection expressly sanctioned in the *2015 Order* as consistent with *Baker Creek*.[89] The FCC has repeatedly pointed to this right and the other passive investor rights identified in *Baker Creek*, such as the right to approve significant corporate debt, as examples of permissible passive investor protections that do not allow an investor "to dominate the management of corporate affairs" or otherwise confer *de facto* control.[90] And VTel provides no explanation why this well-established Commission precedent is inapplicable here.

B. The New Concerns Raised by VTel Lack Merit.

As demonstrated above,[91] the Bureau's *Remand Order* asserted that the Commission's *2015 Order* "comprehensively explained" the issues of *de facto* control for which Applicants were required to seek a cure.[92] Similarly, on review, the Commission indicated that it did not "believe cure discussions between the Applicants and the Commission . . . [were] necessary . . .

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[87] *See* Exhibit A: David J. Salant and Gary Biglaiser, Reply to the Preliminary Economic Analysis of the AWS-3 Auction by Dr. Leslie Marx, at ¶¶ 47-48 (October 2018) ("Salant Report").

[88] *See* VTel Comments at 10-11.

[89] *See 2015 Order* at 8913; *Baker Creek* at 18712-14.

[90] *2015 Order* at 8913.

[91] *See supra* Section II.

[92] *See Remand Order* at 232.

in light of the detailed Commission order describing the *de facto* control issues."[93] In view of these facts, VTel's proposed newly crafted *de facto* control standards cannot apply. Nonetheless, even if the Commission were to consider the new arguments raised by VTel, the new arguments fail on the merits.

1. Applicants have the capability and incentive to deploy wireless service.

In May 2018, to dissuade the Commission from meeting with Applicants, VTel stated that Applicants had "amended their operating agreements to remove DISH's influence over their businesses."[94] Now, however, VTel argues that the contractual modifications made by Applicants in reliance on the *2015 Order* "are nothing more than window dressing designed to obscure the fact that Northstar and SNR are never going to operate an actual business."[95] According to VTel, Applicants do not have "any existing operating business providing the management and technical personnel required for business and network planning and day-to-day control of build-out, management, and operations necessary to operate a business on a scale commensurate with the scope of the licenses obtained in Auction 97."[96]

Putting aside the lack of legal foundation for any FCC inquiry on these issues, VTel's assertions lack merit. In reality, as stated in the attached Declaration of Carlyn R. Taylor, the capital structures and spectrum assets of Northstar and SNR offer their managing members a set

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[93] *Northstar Wireless, LLC, SNR Wireless LicenseCo, LLC, Applications for New Licenses in the 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 MHz Bands*, Memorandum Opinion and Order, FCC 18-98 at ¶ 23 (rel. Jul. 12, 2018) ("*Remand MO&O*").

[94] Letter from Bennett L. Ross, Counsel, VTel, to Marlene H. Dortch, Secretary, FCC, ULS File No. 0006670613, 0006670667, at 9 (filed May 4, 2018).

[95] VTel Comments at 15.

[96] *Id.* at 16 (quoting *2015 Order* at 8911).

of business options that extend well beyond their contractual put options.[97] The Taylor Declaration opines that viable SNR and Northstar business options could include: (i) deploying a wireless network designed for enterprise or consumer applications and providing wireless network services directly or through partnerships with media, data, or other companies; (ii) offering access to the spectrum available under the SNR and/or Northstar FCC licenses via a spectrum sharing model, including spectrum leasing, with an existing wireless provider; and/or (iii) offering wireless network capacity or roaming on a wholesale basis to other providers or users of wireless network services.[98]

Further, VTel's unsupported claims are belied by each Applicant's demonstrated experience and knowledge of the wireless industry. Northstar is owned and controlled by Doyon, Limited ("Doyon"), which is one of twelve Alaska Native Regional Corporations ("ANCs") established by Congress under the Alaska Native Claims Settlement Act[99] and is owned by over 19,000 Alaska Native shareholders.[100] Cognizant of its special status, the nature of its shareholder base, and the broad mission bestowed on it by Congress, Doyon has diversified the economic base from which it serves its shareholders.[101] Among other things, Doyon has invested in the telecommunications industry since the late 1990s.[102] Together with its co-

[97] *See* Exhibit B: Declaration of Carlyn R. Taylor, at ¶ 6 (October 2018) ("Taylor Declaration").

[98] *See id.* at ¶ 9.

[99] 43 U.S.C. § 1601 *et seq*.

[100] *See* Northstar Opposition at 2.

[101] *See* Northstar Opposition at 3; *id.* Attachment 1: Declaration of Aaron M. Schutt at ¶ 8 ("Schutt Declaration").

[102] *See* Schutt Declaration at ¶ 8; Northstar Opposition, Attachment 2: Declaration of Allen M. Todd at ¶ 9 ("Todd Declaration"). Doyon's investment in this regard has been promoted by clear federal policy. Alaska Native Regional Corporations are statutorily prohibited from selling equity—an important capital resource for telecommunications providers as they grow. Thus, the

investors, it had been granted over 45 Commission licenses, reflecting $3.3 billion in gross Commission auction winning bids *prior* to Auction 97.[103]

Doyon was one of three ANCs that owned and controlled Alaska Native Wireless ("ANW"), a venture in which AT&T Wireless ("AT&T") was a non-controlling investor.[104] In Auction 35 in 2000, ANW was the winning bidder for licenses valued at $2.9 billion,[105] becoming the second largest winner in Auction 35, the largest DE winner in Auction 35, and the largest minority-controlled auction winner in the Commission's history (until Auction 97). Doyon has closely followed this business structure and bidding procedures in subsequent designated entity transactions based on the precedent of the ANW transaction.[106]

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lack of access to equity capital as a traditional source of financing, compounded by discrimination against minorities in education and employment opportunities in the early years of the telecommunications industry, created systemic limits to the penetration of these groups into the telecommunications field. *See* Schutt Declaration at ¶ 9. In 1988, Congress determined that "[f]or all purposes of Federal law, a Native Corporation shall be considered to be a . . . minority and economically disadvantaged business enterprise." 43 U.S.C. § 1626(e). In 1990, Congress enacted legislation which provided that in determining the qualifications for a "small" business status, the Small Business Administration ("SBA") shall determine the size of a small business concern owned by an Indian tribe or an Alaska Native Corporation "without regard to its affiliation with the tribe, any entity of tribal government, or any other business enterprise owned by the tribe." 15 U.S.C. § 636 (j)(10)(J)(ii). The SBA then adopted the above statutory language as part of its affiliation regulations for determining the size of a "small" business. 13 C.F.R. § 121.401(b). In 1994, following the development of an extensive record concerning the unique structure and economic status of tribes and Alaska Native Corporations, the Commission adopted its own tribal affiliation exemption that is an important component of its competitive bidding DE rules. *See Implementation of Section 309(j) of the Communications Act – Competitive Bidding, Order on Reconsideration*, 9 FCC Rcd 4493 (1994); *Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, Fifth Memorandum Opinion and Order, 10 FCC Rcd 403, 427-29 ¶¶ 73-76 (1994).

[103] *See* Todd Declaration at ¶ 9.

[104] *See id.*

[105] *C and F Block Broadband PCS Auction Closes*, Public Notice, 16 FCC Rcd 2339, Attachment B (2001).

[106] *See* Todd Declaration at ¶ 9.

Thereafter, Doyon owned and controlled Denali Spectrum, a venture in which Leap Wireless was a non-controlling investor.[107] In Auction 66, Denali Spectrum was the winning bidder for the REAG-3 (Great Lakes) 10 MHz D Block license, a license that covered a substantial portion of the Upper Midwest, which included Chicago, the nation's third largest market.[108] Years ahead of the build-out deadline, Denali Spectrum completely built-out the greater Chicago area and portions of Wisconsin with more than 900 cell sites, a green-field project covering 18,000 square miles and a population of more than 11 million.[109] This service, offered under the Cricket brand, brought industry-changing contract innovations (*e.g.*, unlimited and no-contract plans) for the first time to this region and made available the first affordable broadband offering for lower-income citizens of Chicago, Madison, Rockford, and Kenosha.[110] Motivated by this experience, Doyon formed Northstar Spectrum, LLC, which included a subsidiary of DISH as an indirect non-controlling investor.

SNR is owned and controlled by John Muleta, an experienced entrepreneur with a broad and established background in Commission spectrum auctions and wireless technology.[111] He served for approximately six years at the Commission, including as Deputy Chief of the Common Carrier Bureau and Chief of the Wireless Telecommunications Bureau, where he had

[107] *See id*. at ¶ 10.

[108] *See Wireless Telecommunications Bureau Grants Advanced Wireless Service Licenses*, Public Notice, 22 FCC Rcd 8416 (2007) (granting AWS-1 license offered in Auction 66 to Denali Spectrum License, LLC).

[109] *See* Todd Declaration at ¶ 11.

[110] *See id.*

[111] SNR Opposition at 5.

primary responsibility for regulating providers of wireless services and structuring and managing the Commission's wireless spectrum auctions.[112]

Mr. Muleta also has extensive technology and wireless industry experience in the private sector. Before joining the Commission, he served as a network engineer at GTE Corporation. After his first term of employment at the Commission, he served as a Senior Vice President at PSInet, one of the first commercial ISPs. He also served as an Executive Vice President at Navisite, a company focused on enterprise-class, cloud-enabled hosting, managed applications, and services. Before returning to the Commission as Chief of the Wireless Telecommunications Bureau, Mr. Muleta also served as Chairman and CEO of Tellus, Inc., which at that time was a developer of wireless OEM products, including EVDO cards and modems used in portable devices.[113]

Between 2005-2010, Mr. Muleta served as the co-founder and CEO of M2Z Networks, Inc. ("M2Z"), a wireless startup. It was during this period that he developed expertise regarding the AWS-3 spectrum sold in Auction 97, as well as business experience regarding the competitive and operational challenges of deploying wireless networks. M2Z proposed to deploy a free wireless broadband network, using the 2155-2175 MHz portion of the AWS-3 band, aiming to benefit consumers by disrupting the traditional wireless service delivery model and spurring wireless innovation.[114] In developing both the technical and business plans relating

[112] *Id.* at 5-6.

[113] *Id.* at 6.

[114] *See* Application of M2Z Networks, Inc. for License and Authority to Provide a National Broadband Radio Service in the 2155-2175 MHz Band, WT Docket No. 07-16 (filed May 5, 2006).

to the M2Z application, Mr. Muleta gained an intimate knowledge of the capabilities and limitations of the AWS-3 spectrum.

Since grant of the AWS-3 licenses to SNR, Mr. Muleta has served as the principal technical and legal negotiator in the coordination efforts between incumbent federal operators and commercial AWS-3 licensees for permanent sharing of the 1695-1710 MHz band.[115] Mr. Muleta has met regularly with the spectrum offices of the National Oceanic and Atmospheric Administration ("NOAA");[116] the Department of Defense ("DoD") and its component units of the Army, Navy, Marines, and Air Force; and the Department of the Interior ("DoI").

Those negotiations, which are nearing completion, have taken three years and involved highly complex technical, regulatory, and legal discussions regarding the appropriate operational parameters for predicting and managing the stochastic interactions between mobile uplink transmissions and incumbent federal satellite operations.[117] Through Mr. Muleta's guidance, the parties expect to implement an advanced technological solution (using three spectrum vectors—geography, time and bandwidth) to maximize the utility of the band for all spectrum users and significantly reduce the potential of harmful interference to incumbent satellite operations. Mr.

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[115] *See, e.g., Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Notice of Proposed Rulemaking and Order on Reconsideration, 22 FCC Rcd 11479 (2013); *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd 4610 (2014). The parties are negotiating a multi-year coordination agreement defining the rights and responsibilities of the parties and their technical operating parameters within 27 pre-defined protection zones to minimize the potential for harmful interference to federal operations (satellite to ground stations) while also maximizing commercial utility of the spectrum for commercial broadband communications.

[116] NOAA is the principal federal agency involved in the coordination. NOAA operates the Polar Orbiting Environmental Satellites ("POES"), which communicate in the 1695-1710 MHz band. The other federal agencies operate earth stations that receive data from POES.

[117] *See supra* note 115.

Muleta has also helped develop technical interface requirements to simplify the integration of a Radio Frequency Interference Management System ("RFIMS") to enable rapid response to harmful interference incidents. Mr. Muleta's leadership and active involvement in the coordination efforts readily demonstrate his capability to lead SNR's deployment of a wireless service.

2. With their current capital structures and arrangements, Applicants can obtain additional funds from sources other than DISH, if desirable and necessary.

VTel's assertions that DISH exercises *de facto* control over Applicants via "financing limitations that effectively preclude [Applicants] from seeking independent funding"[118] are unsupported and ignore the contractual changes that enhance the financial flexibility of Applicants.[119] For example, the revised agreements specifically eliminate monetary limits on equipment financing and third-party unsecured debt.[120] In addition, DISH's passive investor consent rights have been narrowed, and apply only to "significant" indebtedness and the sale or other disposition of major assets.[121] These changes facilitate Applicants' pathway to obtaining additional funds from other sources, if necessary. As the Taylor Declaration states, "SNR and Northstar . . . have the benefit of a significant runway under their capital structures."[122] This runway, and Applicants' spectrum assets, make a wide variety of third-party partnerships and/or financing potentially viable.[123] The Taylor Declaration further observes that such "consent

[118] VTel Comments at 3-4.

[119] *See supra* Section II.B.

[120] SNR Comments at 16-17; Northstar Submission at 27.

[121] *See* Taylor Declaration at ¶ 20.

[122] *See id.* at ¶ 19.

[123] *See id.* at ¶ 17.

rights, which are standard passive investor protection rights, do not change [her] opinion . . . , that Northstar and SNR will be able to engage in reasonable actions that maximize returns from their investment in spectrum."[124]

IV. APPLICANTS' BIDDING CONDUCT DOES NOT PRECLUDE A CURE.

Applicants' bidding behavior throughout Auction 97 is not relevant to the Commission's analysis of whether they have cured, pursuant to the D.C. Circuit's decision, what the Commission identified as DISH's *de facto* control over them. The Commission has already acknowledged that Applicants' use of joint bidding agreements was not inherently indicative of *de facto* control.[125] Furthermore, the D.C. Circuit expressly addressed the *2015 Order*'s analysis regarding the parties' bidding conduct and nevertheless remanded the *2015 Order* to allow Applicants to negotiate a cure. The Commission's prior analysis, the D.C. Circuit's remand, and the operation of Section 402(h)[126] render the parties' bidding conduct irrelevant to the question currently before the Commission: whether the amendments to the parties' transactional agreements cure what the Commission identified as DISH's *de facto* control of Applicants.

A. The Court's Remand of the *2015 Order* Forecloses any Argument that Applicants' Bidding Conduct Precludes a Cure.

In deciding to remand the Commission's action, the D.C. Circuit was fully aware of the Commission's stated concerns and analysis regarding the parties' bidding conduct. Its decision analyzed the Commission's conclusions carefully.[127] Still, the D.C. Circuit sent the *2015 Order* back to the Commission and ordered the Commission to allow the parties "an opportunity to seek

[124] Taylor Declaration at ¶ 20.

[125] *See 2015 Order* at 8931-32.

[126] 47 U.S.C. § 402(h).

[127] *See SNR v. FCC* at 1041-42.

to negotiate a cure for the *de facto* control the FCC found that DISH exercises over them."[128] This court-mandated opportunity to cure presents the FCC solely with the question of whether the parties have restructured their relationships so as to cure the *de facto* control concerns identified in the *2015 Order*. Consideration of the parties' bidding conduct, by definition, has no bearing on this question—past bidding conduct is immaterial to the question of whether the restructured agreements have cured the identified *de facto* control concerns prospectively. To find otherwise would render the opportunity to cure granted by the *2015 Order* meaningless and thus violate the D.C. Circuit's mandate.[129]

Section 402(h) obligates the Commission to "carry out the judgment of the court and . . . to forthwith give effect thereto."[130] The scope of the D.C. Circuit's mandate here is clear—to allow the parties "an opportunity to seek to negotiate a cure for the *de facto* control the FCC found that DISH exercises over them."[131] The Bureau acknowledged the scope of the D.C. Circuit's decision in its *Remand Order*, stating that the court "provide[d] an opportunity for each Applicant to renegotiate its business arrangements with DISH and the other parties to its agreements in order to cure its ineligibility for the bidding credits," and did *not* reopen questions regarding the parties' bidding conduct.[132]

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[128] *Id.* at 1025.

[129] *See* Letter from Mark F. Dever, Counsel, Northstar, and Ari Q. Fitzgerald, Counsel, SNR, to Rachael Bender, Office of Chairman Pai, FCC, ULS File Nos. 0006670613, 0006670667, at 4-6 (filed Apr. 2, 2018) (demonstrating, among other things, that the bidding conduct at most informed the Commission's *de facto* control analysis and that the Commission cannot now find the bidding conduct to be an impediment to negotiating a cure of the parties' agreements without violating the D.C. Circuit's mandate and raising significant due process issues).

[130] 47 U.S.C. § 402(h).

[131] *SNR v. FCC* at 1025.

[132] *Remand Order* at 232.

Consistent with this analysis, the Commission recently confirmed its view to the Supreme Court that DISH's *de facto* control of Applicants can be cured through amendments to the transactional documents.[133] Similarly, the U.S. Department of Justice has recently stated in the context of the VTel False Claims Act case that this remand proceeding is limited to "whether and how [the Applicants] can alter their relationship with [DISH] so as to entitle Northstar and SNR to the bidding credits for 'very small businesses' that were previously denied."[134]

In short, Section 402(h) precludes participants in the remand proceeding (or the Commission) from reintroducing the question of the parties' bidding conduct in connection with the D.C. Circuit's remand in *SNR v. FCC.* The Commission instead must focus on the question presented by that decision: whether the amendments to the parties' transactional agreements cure what the Commission identified as DISH's *de facto* control of Applicants.

B. The FCC's Decision Shows Applicants' Bidding Conduct Was Not Dispositive of *De Facto* Control.

Any reopened discussion of Applicants' bidding conduct also is precluded by the Commission's prior actions. In the *2015 Order*, the Commission held that Applicants' bidding behavior did not violate the Commission's rules for Auction 97 and did not raise questions about Applicants' character qualifications to hold licenses.[135] The Commission also acknowledged that

[133] Brief for the Respondents in Opposition at 21, *SNR Wireless License Co. v. FCC*, Sup. Ct. No. 17-1058 (May 2018) ("If petitioners successfully amend their agreements with DISH to eliminate DISH's *de facto* control and affiliate status, the dispute in this case will have no continuing practical importance.").

[134] United States' Statement of Interest at 1 (Oct. 10, 2018), *United States ex rel. Vermont National Telephone Co. v. Northstar Wireless, L.L.C. et al.,*, Civ. Act. No. 15-00728(CKK) (D.D.C. filed May 13, 2015).

[135] *2015 Order* at 8890-91.

Applicants' use of joint bidding agreements was not inherently indicative of *de facto* control.[136] None of these conclusions were challenged; thus, they are final and cannot be revisited in the context of this cure proceeding.[137]

Furthermore, as Applicants previously explained, finding that their bidding conduct demonstrated *de facto* control would violate Applicants' due process rights, as they were not on notice that the Commission might find the bidding conduct relevant to create *de facto* control.[138] The Commission had not previously found that auction conduct, standing alone or in part, creates *de facto* control. Moreover, the parties could not have reasonably anticipated that their bidding conduct would raise *de facto* control issues, given that the Commission has readily granted licenses won under similar joint bidding arrangements.

C. Applicants' Bidding Conduct Did Not Reflect *De Facto* Control by DISH.

Separate and apart from the fact that VTel's arguments regarding Applicants' bidding conduct constitute an improper collateral attack on the *2015 Order* and are barred from

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[136] *Id*. at 8931-32.

[137] *See* 47 U.S.C. §§ 402(c), 405(a); 47 C.F.R. § 1.106(f). The Commission has repeatedly held that "'indirect challenges to decisions that were adopted in proceedings in which the right to review has expired are considered impermissible collateral attacks and are properly denied.'" *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions et al.*, Order, 31 FCC Rcd 905, 908-09 ¶ 9 n.32 (2016) ("*Denial of T-Mobile Incentive Auction Petition for Reconsideration*") (quoting *Amendment of Section 73.22 et al.*, Memorandum Opinion and Order on Further Reconsideration, 29 FCC Rcd 4769, 4772 ¶ 9 (2014)); *Application of Verizon Communications Inc. and Straight Path Communications, Inc. et al.*, Memorandum Opinion and Order, 33 FCC Rcd 188, 192-93 ¶ 12 (2018) (rejecting, as collateral attacks, arguments to deny a transfer of control application based on issues settled in a separate and final FCC consent decree); *MCI Telecomm. Corp. v. Pacific Northwest Bell Telephone Co.*, Memorandum Opinion and Order, 5 FCC Rcd 216, 228, ¶ 41 n.38 (1990), *recon. denied*, 5 FCC Rcd 3463 (1990), *appeal dismissed sub nom. Mountain States Tel. and Tel. Co. v. FCC*, 951 F.2d 1259 (10th Cir. 1991) (*per curiam*) (rejecting, as "impermissible collateral attacks," arguments that a party inflated its rate of return calculation by using a methodology that was adopted in a prior decision that had become final).

[138] *See supra* note 17, 70.

reintroduction here by operation of Section 402(h) of the Communications Act,[139] VTel's arguments are wrong on the merits. The scope of Applicants' coordination with each other and DISH in Auction 97 was disclosed to the Commission and publicly available prior to the auction as required by Commission rules.[140] Moreover, Applicants' bidding conduct was fully consistent with the FCC's rules and their joint bidding agreements.[141] Simply put, Applicants were acting in their own respective interests and not under DISH's *de facto* control.[142]

VTel's argument to the contrary[143] relies on a "Preliminary Economic Analysis of the AWS-3 Auction" prepared by Dr. Leslie Marx.[144] The Marx Report, however, does not provide any basis to conclude that Applicants' bidding conduct was a consequence of *de facto* control by DISH. Indeed, the Marx Report is directly and conclusively refuted by the attached report of Dr. David Salant and Dr. Gary Biglaiser, professors of economics steeped in spectrum auctions in the United States and worldwide.[145] Drs. Salant and Biglaiser demonstrate that Dr. Marx's arguments that Applicants were operating under DISH's control are based on flawed and

[139] *See supra* Sections IV.A and B.

[140] *See* 47 C.F.R. § 1.2105.

[141] *See* SNR Opposition at 36-57; Northstar Opposition at 41-58

[142] *See id.*

[143] *See* VTel Comments at 19.

[144] *See id.* at 19. *See also* VTel Comments, Appendix 3: Leslie M. Marx, Preliminary Economic Analysis of the AWS-3 Auction (dated July 20, 2018) ("Marx Report"). Applicants note further that the Marx Report reiterates facts and issues presented to the Commission in 2015 and which where are adjudicated in the *2015 Order*. As such, the Marx Report, like VTel's challenge to Applicants' bidding conduct more generally, is an improper collateral attack on the *2015 Order* and may not be introduced at this stage of the proceeding.

[145] *See generally* Salant Report.

speculative inferences drawn from fragments of information that fail to take into account the incentives created by the FCC's own auction rules.[146]

In its brief, VTel highlights one argument in the Marx Report – that the significant coverage gaps in Applicants' individual spectrum holdings suggest DISH's *de facto* control.[147] The Marx Report posits that such coverage gaps or non-contiguous service areas are not what "one would expect of a firm that intends to construct a mobile wireless system" and therefore Applicants must have been operating under DISH's control and not acting in their own individual interests.[148]

The Salant Report demonstrates the fatal flaw in this reasoning. According to the Salant Report, sophisticated bidders in FCC spectrum auctions *can and do* purchase portfolios of licenses that either have significant coverage gaps and/or are non-contiguous for rational, profit-maximizing reasons.[149] For example, focusing on the recently concluded broadcast incentive auction (Auction 1002), the Salant Report shows that CC Wireless Investment, LLC (Comcast), United States Cellular Corporation, Channel 51 (Columbia Capital and Raj Singh), Bluewater Wireless II, L.P. (Amos Hostetter, Abrams Capital, Charles Townsend), TStar 600, LLC (Northwood Ventures), New Level (Grain Group), and Omega Wireless, LLC (MC Partners) all were winning bidders on groups of licenses that are smaller and/or less contiguous than the

[146] *See* Salant Report at ¶ 4.

[147] VTel Comments at 22; Marx Report at ¶¶ 56-57.

[148] Marx Report at ¶ 57.

[149] *See* Salant Report at ¶¶ 10, 47-48.

holdings of either Northstar or SNR.[150] The Commission granted bidding credits to Bluewater Wireless, Omega, and TStar 600, among others.[151]

As the Commission has acknowledged, licensees need the flexibility to acquire spectrum holdings with different and potentially non-contiguous service areas to support a wide variety of business plans. For instance, in crafting rules for the AWS-3 band, the Commission discussed the merits of licensing the band using differing service areas:

> Licensing some areas by CMA will encourage the dissemination of licenses among a variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women . . . . Licensing some areas by EAs will enable large carriers to minimize post-licensing aggregation costs. . . . Licensing three spectrum blocks on an EA basis best balances the Commission's goals of encouraging the offering of broadband service both to broad geographic areas and to sizeable populations while licensing one block by CMAs will enable smaller carriers to serve smaller less dense population areas that more closely fit their smaller footprints.[152]

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[150] *See id.* at ¶ 48.

[151] *See Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses*, Public Notice, 32 FCC Rcd 4832 (WTB 2017) (Comcast winning bidder); *Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses*, Public Notice, DA 18-693 (WTB rel. July 3, 2018) (Bluewater winning bidder); *Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses*, Public Notice, DA 18-774 (WTB rel. July 26, 2018) (Omega winning bidder); *Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses*, Public Notice, 33 FCC Rcd 98 (WTB 2018) (TStar 600 winning bidder).

[152] *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd 4610, 4633 ¶ 49 (2014) (footnotes omitted). Indeed, the Commission routinely discusses the relationship of flexible licensing choices to a wide variety of potentially-divergent business plans, which are not something regulated by the Commission. *See Use of Spectrum Bands Above 24 GHz for Mobile Radio Services Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, Appendix E at 8241 ¶ 27(2016) ("These rules should enable providers, or any entities large or small providing service in the mmW bands, to more easily adjust their spectrum holdings and build their networks pursuant to individual business plans"); *Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 to*

In short, according to the Salant Report, there is no reason to conclude that coverage gaps or non-contiguous service areas in Applicants' spectrum holdings are not what "one would expect of a firm that intends to construct a mobile wireless system."[153] Thus, as shown in the Salant Report, coverage "gaps" in Applicants' individual spectrum holdings are not evidence that Applicants were acting contrary to their own economic interests, as Dr. Marx wrongly concludes.[154]

V. NEW CONCERNS REGARDING CONTRACTUAL PROVISIONS NOT IDENTIFIED IN THE *2015 ORDER* EXCEED THE SCOPE OF THE COURT'S REMAND AND THE *REMAND ORDER.*

A. Consideration of Aspects of Applicants' Relationships with DISH that Have Not Materially Changed Since the *2015 Order* Would Violate Fair Notice.

The Commission's review of Applicants' revised agreements is limited to the provisions of Applicants' agreements and aspects of their contractual relationships with DISH that the *2015 Order* identified as problematic and which the D.C. Circuit directed the Commission to afford Applicants the ability to cure. The Commission opened these remand proceedings to provide

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Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services, Notice of Proposed Rulemaking and Order, 25 FCC Rcd 6996, 7025 ¶ 76 (2010) ("[T]he [Commission] thus adopted rules that provide geographic-area licenses discretion to determine the amount of spectrum they will occupy and the area they will serve consistent with their business plan, which may not necessarily coincide with predetermined spectrum block and geographic areas of the licenses in a specific service").

[153] Marx Report at ¶ 57. VTel also argues that post-auction defaults "preserved the nationwide coverage of the combined Northstar and SNR spectrum, the defaults created additional geographic holes in the individual coverage of Northstar and SNR," which VTel characterized as detrimental to them. VTel Comments at 24. As the Salant Report shows, however, this is clearly undermined by evidence from the Incentive Auction that major wireless carriers, potential entrants, and sophisticated financial investors purchased spectrum portfolios with less than uniform coverage. *See* Salant Report at ¶ 48; *see also supra* note 87 and accompanying text.

[154] *Cf*. Salant Report at ¶¶ 47-48. Other claims made in the Marx Report—but not discussed by VTel in its Comments—are addressed in the Salant Report.

Applicants the opportunity to renegotiate their agreements with DISH.[155] The Commission stated that the *2015 Order* "comprehensively explains to Applicants how specific features of the relationship between each Applicant and DISH . . . demonstrate that DISH exercises *de facto* control over Applicants."[156]

"[R]egulated parties need fair notice of the circumstances in which a finding of *de facto* control will and will not be subject to an opportunity to attempt to negotiate a cure,"[157] and "[i]n the absence of notice . . . an agency may not deprive a party of property by imposing civil or criminal liability."[158] The Commission has issued no guidance beyond that contained in the *Remand Order* and *Remand MO&O*.[159] Nor has it provided any indication that it will consider other aspects of Applicants' contractual relationships with DISH outside of those that Applicants revised in direct response to the Commission's *2015 Order*. Therefore, any consideration of matters that were not identified in the *2015 Order* as problematic and requiring a cure would violate fair notice requirements.[160]

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[155] *See Remand Order* at 232.

[156] *Id.*; *see also Remand MO&O* at ¶ 20 ("[T]he Commission's extensive analysis of the *de facto* control problems contained in the Applicants' initial agreements with DISH set forth in great detail the application of the *de facto* control standard.").

[157] *SNR v. FCC* at 1046.

[158] *Trinity Broadcasting of Florida, Inc. v. FCC*, 211 F.3d 618 (D.C. Cir. 2000) (citing *GE v. EPA* at 1328-29).

[159] *Remand Order* at 232; *Remand MO&O* at ¶ 16.

[160] *See generally FTC v. Wyndham Worldwide Corp.*, 799 F.3d 236 (3d Cir. 2016); *United States v. AMC Entertainment, Inc.* 549 F.3d 760, 763-64 (9th Cir. 2008); *United States v. Hoechst Celanese Corp.*, 128 F.3d 216, 225 (4th Cir. 1997); *Employer Sols. Staffing Grp. II, L.L.C. v. Office of Chief Admin. Hrg. Officer*, 833 F.3d 480, 489 (5th Cir. 2016); *Kropp v. Forge Co. v. Sec'y of Labor*, 657 F.2d 119, 122 (7th Cir. 1981).

B. VTel's Challenge to the DISH Guarantees for Potential Default Payments Should Be Rejected.

VTel complains that since "guarantees provided by DISH remain in place and have not been 'cured,'" this "is further evidence of DISH's continued *de facto* control."[161] VTel further argues that the "Commission can reasonably conclude that DISH would have no business reason to agree to make any deficiency payments . . . unless DISH got something in return."[162]

The DISH guarantees complained of by VTel were induced by the Bureau[163] and may not be relied upon by the FCC to demonstrate *de facto* control.[164] In requiring the DISH guaranty,

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[161] VTel Comments at 25.

[162] *Id.* at 26.

[163] *See* Letter from Roger C. Sherman, Chief, WTB, to Ari Q. Fitzgerald, Counsel, SNR, 30 FCC Rcd 10704 (Oct. 1, 2015) ("SNR Default Letter"); Letter from Roger C. Sherman, Chief, WTB, to Mark F. Dever, Counsel, Northstar, 30 FCC Rcd 10700 (Oct. 1, 2015) ("Northstar Default Letter").

[164] As the Commission itself acknowledged in its October 1, 2015 letter to Applicants, the Commission has previously permitted winning bidders at auction to default selectively on licenses where the applicant has a sufficient amount of money on deposit to cover the licenses the bidder wishes to retain, plus the associated interim default payment obligations. *See* SNR Default Letter at 2, n. 13; *see also LMDS Communications, Inc., Request for Waiver of Sections 1.2109(a) and (c), 1.2104(g) and 101.1105(b) of the Commission's Rules Regarding BTA117, BTA122, BTA203, BTA215, BTA218, BTA287, BTA317, BTA328, BTA330, BTA335, BTA375 and BTA416*, Order, 15 FCC Rcd 8618, 8622 ¶ 9 n.30 (2000); *Application of Baker Creek Communications, L.P. for Authority to Construct and Operate Local Multipoint Distribution Services in Multiple Basic Trading Areas*, Order, 14 FCC Rcd 11529 (1999); *Tel-Com Wireless Cable TV Corporation*, Order, 12 FCC Rcd 6747 (1997) (allowing bidder in Multipoint Distribution Service auction to retain two of three BTAs bid on at auction, but requiring that default penalties be paid on third BTA); Letter to Stephen Kaffee, Counsel, Entertainment Unlimited, Inc., from Amy J. Zoslov, Chief, Auctions and Industry Analysis Division, 14 FCC Rcd 4026 (Mar. 17, 1999) (setting forth default payment obligations for PCS D, E, and F, block winner that selectively defaulted on one of five licenses); Letter from Amy J. Zoslov, Chief, Auctions and Industry Analysis Division, to John A. Prendergast, Counsel, New Wave Networks, L.L.C., 14 FCC Rcd 6323 (April 9, 1999) (granting LMDS applicant request that deposit payments be applied to four licenses and allowing selective default on remaining two licenses won at LMDS Auction No. 17).

the Bureau explained its concern regarding Applicants' ability to make deficiency payments.[165] Applicants and DISH provided the Commission with security against that risk in the form of the DISH guarantees, necessitating some revisions to the credit agreements between Applicants and two DISH subsidiaries.[166] Additional facts regarding the DISH guarantees and their geneses provide further support for the rejection of VTel's claims. First, the Bureau directed Applicants to amend their credit agreements with DISH to provide guarantees to the FCC *after* the Commission unlawfully denied Applicants the opportunity to cure *de facto* control concerns and put Applicants in a position requiring the selective default of licenses.[167] Thus, but for the Bureau's actions leading up to the *2015 Order*, Applicants and DISH would not have been put in the position to countenance default guarantees.

Further, the Bureau's statement is not merely "informal staff guidance," as VTel argues.[168] The Bureau's conclusion that the guarantees cannot be used to demonstrate control is a final written order, legally binding on the parties to the proceeding, and therefore cannot be

[165] *See* SNR Default Letter at 4; Northstar Default Letter at 4.

[166] *See* SNR Default Letter at 4; Northstar Default Letter at 4.

[167] *See* Revised SNR Credit Agreement § 2.2(a)(iv); Revised Northstar Credit Agreement § 2.2(a)(iv).

[168] *See* Comments of VTel Wireless at 26 & n.66. The cases VTel cites to support its argument are inapposite because in those cases the Commission staff provided oral statements or guidance that had no legal effect. Those cases reference situations in which applicants filed defective applications and cited conversations with or statements by Commission staff providing information contrary to the Commission's rules as defense for failing to comply with application acceptability requirements. *See 159 Applications for Authority to Construct and Operate Multipoint Distribution Service Stations at Six Transmitter Sites*, Memorandum and Order on Reconsideration, 10 FCC Rcd 11141, 11157-58 ¶¶ 49-53 (1995); *see also Malkan FM Associates v. FCC*, 935 F.2d 1313, 1319 (D.C. Cir. 1991). Unlike the oral, informal staff advice or interpretations at issue in those cases, the Bureau's statements here were memorialized in a letter order.

collaterally attacked three years later.[169] Indeed, the Commission described the Bureau's October 1, 2015 letters to Applicants as a "prior determination" when dismissing other parties' attempts to re-litigate settled issues in this proceeding.[170] If VTel had issues with the DISH guarantees, it should have raised its concerns years ago, within the permitted period.[171]

VI. THE FCC SHOULD DISMISS THE FILINGS OF AT&T, T-MOBILE, AND VTEL.

A. AT&T and T-Mobile Lack Standing to Participate in these Remand Proceedings.

1. The Commission's decision in the *2015 Order* bars the participation of AT&T and T-Mobile in this remand proceeding.

This proceeding on remand involves the applications and associated requests for bidding credits originating from the participation of SNR and Northstar in Auction 97 in 2014. Parties interested in objecting to or commenting on the grant of licenses and/or associated bidding credits to either Applicant were required to do so by May 11, 2015. Because neither AT&T nor T-Mobile did so, they are prohibited under the Commission's rules from doing so now. Accordingly, the FCC should dismiss their respective filings.[172]

Neither entity timely filed pleadings in the underlying application proceedings. AT&T submitted a "Partial Opposition to Petitions to Deny" on May 18, 2015, a week after the petition

[169] While a Bureau decision does not necessarily bind the Commission in future proceedings, the Bureau's decision is binding on the *parties to the proceeding* in which the decision was issued.

[170] *See Denial of T-Mobile Incentive Auction Petition for Reconsideration* at 914-15 ¶ 26 n.84.

[171] *See, e.g., Gordon Cty. Broad. Co.*, 446 F.2d at 1338.

[172] Applicants also have challenged the inclusion of AT&T and T-Mobile as parties on remand. Notice of Appeal, *Northstar Wireless, LLC v. FCC*, No. 18-1209 (D.C. Cir. Aug. 2, 2018); Petition for Review, *Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC v. FCC*, No. 18-1210 (D.C. Cir. Aug. 2, 2018).

to deny deadline.[173] Applicants objected to the filing as an untimely petition to deny.[174] The Commission agreed, stating that AT&T was not entitled to file an opposition and it was otherwise untimely filed, and dismissed the filing without consideration.[175] AT&T did not challenge that decision, and it is final. Accordingly, AT&T now has no standing to participate on remand.[176]

T-Mobile did not timely submit a pleading in either Applicant's license application proceeding,[177] and the Bureau itself previously concluded that T-Mobile lacked standing to challenge the *2015 Order* in light of its failure to participate in the SNR or Northstar license application proceeding.[178] T-Mobile's attenuated connection to the license application proceedings stems from a letter and pleading it submitted more than three months *after* the release of the *2015 Order* in response to a public notice in a wholly separate rulemaking

[173] AT&T Partial Opposition to Petitions to Deny, ULS File Nos. 0006670613, 0006670667 (filed May 18, 2015).

[174] *See generally* SNR Opposition; Northstar Opposition.

[175] *See 2015 Order* at 8906.

[176] *See supra* note 136.

[177] *See Denial of T-Mobile Incentive Auction Petition for Reconsideration* at 909-10.

[178] *See id.* at 915 ("T-Mobile did not file a petition to deny or otherwise participate in either the SNR or Northstar license application proceedings and it therefore lacks standing to challenge the determinations in the [*2015 Order*].").

proceeding related to the broadcast incentive auction.[179] Having already failed to establish standing to challenge the *2015 Order*, T-Mobile cannot now participate on remand.[180]

Moreover, neither AT&T nor T-Mobile provided any basis for supporting their standing to file comments in these proceedings on remand, despite being aware that they needed to justify their standing to participate.[181] Having failed to do so, the Commission should dismiss the respective filings.

2. Allowing AT&T and T-Mobile to participate in the proceeding on remand violates Section 402(h).

Section 402(h) was enacted in part to give reviewing courts control over remanded proceedings, including oversight of the agency's authority to introduce new parties and new issues.[182] Reviewing courts have found error when the FCC has attempted to implement a remedy that exceeded a court's instructions on remand, including opening the proceeding to unauthorized parties.

For example, in *Qualcomm v. FCC*, the D.C. Circuit found that the FCC violated Section 402(h) and the court's remand instruction when the FCC issued a public notice soliciting

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[179] *See* Letter from Kathleen O'Brien Ham, Senior Vice President, T-Mobile US, Inc., to Marlene H. Dortch, Secretary, FCC, ULS File Nos. 0006670613 and 0006670667 (filed Nov. 17, 2015); Petition for Reconsideration or Request for Declaratory Ruling of T-Mobile USA, Inc., AU Docket No. 14-252, *et al.*, at 1 (filed Nov. 30, 2015) (arguing that Applicants and DISH should be "considered 'former defaulters' under the Commission's rules and, as such, [be] requir[ed] [to] provide a 50% higher upfront payment").

[180] *See Southland Television Co.*, 44 F.C.C. 1239, 1242 (1958) ("*Southland Television Co.*"); *see also supra* note 136.

[181] *See 2015 Order* at 8901-02 ("If the Applicants choose, they may file a pleading to address any issues raised by the Parties of Record (*including any new standing claims*).") (emphasis added).

[182] *Cf. Greater Bos. Tel. Corp. v. FCC*, 463 F.2d 268, 282 (D.C. Cir. 1971) (citing S. REP. NO. 82-44 (1951)).

comment regarding the remand and unnecessarily joined other entities as parties.[183] Consistent with this limitation, the Commission has ruled that Section 402(h) precludes it from granting party status to an entity that, by its own actions, is no longer part of the proceeding.[184] The Commission should take similar action here and dismiss the filings of AT&T and T-Mobile.[185]

B. VTel's Filing Should Be Dismissed Under Section 309(d)(1).

By statute, a petition seeking to deny a license application[186] must set forth specific allegations of fact, supported by an affidavit from a person with personal knowledge thereof, sufficient to make a *prima facie* showing that the petitioner is a party in interest and that grant of the application would be inconsistent with the public interest, convenience, and necessity.[187] VTel did not provide an affidavit in support of its factual allegations. The FCC has held that in such cases the petitions are procedurally flawed and should be dismissed.[188]

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[183] *Qualcomm Inc. v. FCC*, 181 F.3d 1370, 1377 (D.C. Cir. 1999) ("*Qualcomm v. FCC*").

[184] *See Southland Television Co.* at 1242.

[185] To the extent the Commission treats the AT&T Comments and T-Mobile Comments as petitions to deny based on allegations of fact, the Commission should dismiss those filings for failing to provide an affidavit of an individual with personal knowledge concerning the facts alleged. *See* 47 U.S.C. § 309(d)(1).

[186] To the extent the filings seek to deny grant of licenses or bidding credits, the Commission should impose the procedural requirements applicable to Petitions to Deny. *See 2015 Order* at 8906 (dismissing a "Partial Opposition" as an untimely filed petition to deny); *Sweet Briar Institute*, Order, 24 FCC Rcd 8088 (2009) (dismissing a petition to deny where it is effectively an untimely petition for reconsideration of an agency order); *see also supra* note 136.

[187] *See* 47 U.S.C. § 309(d)(1); *see also* 47 C.F.R. § 1.2108(b) ("Any such petitions [to deny] must contain allegations of fact supported by affidavit of a person or persons with personal knowledge thereof.").

[188] *See, e.g., Petition for Reconsideration of Various Auction 87 Public Notices, Petition to Deny Long-Form Application of Silke Communications, Inc. (Auction 87), Petition to Deny Long-Form Application of Two Way Communications (Auction 87),* Memorandum Opinion and Order, 27 FCC Rcd 4374, 4381-82 ¶¶ 18-20 (2012) (rejecting petition to deny an auction application for failure to set forth specific allegations of fact) ("*Auction 87 Order*"); *United States Cellular Corp. Constructed Tower Near Fries, Virginia et al.*, Order, 24 FCC Rcd 8729, 8734 ¶ 15 (2009)

VII. APPLICANTS ARE ENTITLED TO ALL OF THE LICENSES ON WHICH THEY DEFAULTED.

If the Commission finds that Applicants have cured the *de facto* control issues identified in the *2015 Order*, the Commission can and should take the necessary steps to return Applicants to the *status quo ante*. Specifically, the Commission should: (i) return the interim default penalties Applicants paid in connection with their default on selected licenses won in Auction 97 (the "Defaulted Licenses");[189] and (ii) reinstate and grant the applications for the Defaulted Licenses.[190] Returning Applicants to the *status quo ante* in these ways is the appropriate action here because Applicants' decisions to selectively default can be traced directly to the Commission's own legal missteps. Thus, simple equity requires returning Applicants to the *status quo ante* by reinstating and granting the applications for the Defaulted Licenses and returning the interim default penalty.

In the *2015 Order*, the Commission concluded that Applicants were not eligible for bidding credits in Auction 97 because DISH exercised *de facto* control over Applicants and ordered the Applicants to fully pay for all of the licenses in short order or default on all of the

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(dismissing petition to deny for failure to include an affidavit attesting to petitioner's interest and stating that "[i]t is important for the orderly processing of applications and petitions that parties adhere to the Commission's pleading practices outlined in Part I of the Commission's rules.").

[189] The Bureau imposed interim default penalties on SNR and Northstar of $333,919,350 and $181,635,840, respectively. *See Notice of Interim Default Payment Obligations for Auction 97 Licenses, Application of Northstar Wireless, LLC for AWS-3 Licenses in the 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz Bands*, 30 FCC Rcd 10700 (2015); *Notice of Interim Default Payment Obligation for Auction 97 Licenses; Application of SNR Wireless License Co, LLC for AWS-3 Licenses in the 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz Bands*, 30 FCC Rcd 10704 (2015) (together "*Default Notices*").

[190] Reinstatement and grant of the applications for the Defaulted Licenses will render moot any final default payments that may have been subsequently required under 47 C.F.R. § 1.2104(g)(2). *See generally Default Notices supra* note 189.

licenses.[191] From a financial and timing perspective, Applicants could not have prudently borrowed the additional $3.3 billion required to pay for all of the licenses without bidding credits. The additional debt would have caused Applicants, among other things, to incur potentially hundreds of millions of dollars in additional interest payments that they could never recover, even if successful upon appeal. As a direct consequence, Applicants were forced to selectively default on certain licenses won at auction.[192] The Bureau acknowledged the selective defaults and, among other things, imposed interim default penalties on Applicants.[193]

The *2015 Order*, however, was legally flawed. As the D.C. Circuit held, the Commission failed to provide adequate notice that it would not provide Applicants an opportunity to cure the *de facto* control concerns that rendered Applicants ineligible for bidding credits.[194] The Commission's unlawful action effectively precluded Applicants from restructuring their relationships with DISH to ensure their eligibility for the bidding credits, thereby necessitating Applicants' respective decisions to selectively default. In other words, but for the Commission's unlawful action, Applicants could have acquired all the licenses for which they bid with the benefit of bidding credits and avoided the penalties associated with selectively defaulting.

Returning license applicants to the *status quo ante* is the appropriate remedy in cases such as this where Applicants have lost a chance to acquire licenses because of the

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[191] *2015 Order* at 8890-91.

[192] *See* Letter from Mark F. Dever, Counsel, Northstar, to Jean L. Kiddoo, Deputy Bureau Chief, WTB, ULS File No. 0006670613 (filed Oct. 1, 2015); Letter from Ari Q. Fitzgerald, Counsel, SNR, to Jean L. Kiddo, Deputy Bureau Chief, WTB, ULS File No. 0006670667 (filed Oct. 1, 2015).

[193] *See generally Default Notices supra* note 189.

[194] *See SNR v. FCC* at 1021.

Commission's improper actions.[195] Indeed, *NextWave v. FCC* and related precedent confirms that the proper remedy for an unlawful FCC action resulting in the loss of FCC licenses is the reinstatement of the lost licenses. In that case, NextWave won FCC licenses at auction and committed to pay for them through an installment program.[196] NextWave, however, subsequently declared bankruptcy and ceased making payments.[197] The FCC ultimately cancelled and reauctioned NextWave's licenses.[198]

The Supreme Court, however, upheld the D.C. Circuit decision reversing and remanding the FCC orders cancelling the licenses, finding that the cancellation of the licenses was "not in accordance with the law."[199] On remand, NextWave and the FCC settled their dispute with an agreement that involved, among other things, returning to NextWave the vast majority of the spectrum licenses that had been cancelled.[200] In related cases and following the Supreme Court's decision in *NextWave,* the FCC conceded that it had incorrectly cancelled the licenses won at auction by other licensees, who had subsequently defaulted on payment, and reinstated those

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[195] *See generally Maxcell Telecom Plus, Inc. v. FCC*, 815 F.2d 1551 (D.C. Cir. 1987) (ordering the FCC to reinstate *nunc pro tunc* an unserved area application dismissed as improperly filed because the FCC failed to give the applicant notice that its right to file such application had been terminated); *McElroy Elecs. Corp. v. FCC*, 990 F.2d 1351 (D.C. Cir. 1993) (ordering the FCC to reinstate certain unserved area cellular applications incorrectly dismissed as premature); *Qualcomm v. FCC* (ordering the FCC to take appropriate action to fully remedy its arbitrary and capricious decision not to award a pioneer preference to a qualified applicant).

[196] *See NextWave Pers. Commc'ns., Inc. v. FCC*, 254 F.3d 130, 139-40 (D.C. Cir. 2001) ("*NextWave v. FCC*").

[197] *Id.* at 133.

[198] *Id.*

[199] *FCC v. NextWave Pers. Commc'ns.*, 537 U.S. 293 (2003).

[200] *See* News Release, FCC Announces NextWave Settlement Agreement (rel. Apr. 20, 2004).

cancelled licenses as well.[201] This long-standing precedent makes clear that in cases where improper FCC action causes applicants to lose licenses that they otherwise would have possessed, the proper remedy is to return Applicants to the *status quo ante* by reinstating the licenses that were lost.

AT&T and VTel argue that reinstatement and grant of the defaulted applications is barred by Section 1.2109(c) of the Commission's rules. That rule states in pertinent part that, in the case of a default, the Commission must "either re-auction the license(s) to existing or new applicants or offer it [or them] to the other highest bidders (in descending order) at their final bids."[202] These claims incorrectly assume that the FCC's actions forcing Applicants to default are valid, which is not the case here, due to the unlawful agency action that precipitated the D.C. Circuit's remand.[203] The D.C. Circuit returned the case to the Commission to provide Applicants the opportunity to cure—without penalty. Penalizing Applicants by refusing to reinstate the licenses would effectively contravene the court's remand instructions. Moreover, the logical consequence of AT&T's and VTel's arguments would be that reauctioned licenses would subject Applicants to potential penalties. The Communications Act does not provide the Commission with the authority to override the D.C. Circuit's broad judicial discretion to fashion remedies.[204]

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[201] *See Urban Comm-North Carolina, Inc. et al.*, 18 FCC Rcd 18791, 18794 ¶ 9 (2003) ("[B]ecause Urban Comm was under the protection of Chapter 11 of the U.S. Bankruptcy Code at the time it defaulted on its license payment obligation, the Commission's automatic cancellation rule was ineffective."); *Airadigm Communications*, 18 FCC Rcd 16296, 16299 ¶ 7 (2003) (same).

[202] 47 C.F.R. § 1.2109(c); *see also* AT&T Response at 4-7; VTel Response at 29-32.

[203] *See, e.g., FCC v. NextWave Pers. Commc'ns.* at 304.

[204] *See, e.g., Hecht Co. v. Bowles*, 321 U.S. 321, 327-31(1944) (holding that a reviewing court is presumed to have equitable discretion to withhold or fashion an equitable remedy).

In any event, the plain language of the rule notwithstanding, Section 1.2104(c) does not bar the Commission from reinstating and granting the applications for the Defaulted Licenses. First, the Commission has authority to waive its rules for "good cause shown."[205] The Commission exercises that discretion "where the particular facts make strict compliance inconsistent with the public interest."[206] Indeed, the general equities and public interest at issue in this matter all weigh against strict application of Section 1.2109(c) to bar Applicants from recovering the Defaulted Licenses.[207]

Moreover, doing so will best serve the public policy purposes implicit in Section 1.2109(c). The Commission has explained that the re-auction approach established in Section 1.2109(c) is intended to ensure that "licenses [are] awarded to the parties that value them most highly."[208] As such, the rule presupposes that the original winner cannot or will not take the licenses at the original winning bid. Here, that presumption fails. Applicants—who made the highest bids on the licenses in the FCC's record-setting auction and thus valued the licenses most highly—have already paid 100 percent of the net winning bid prices and stand ready to take the licenses. Further, following a cure of the *de facto* control concerns expressed in the *2015 Order*, there will no longer be any basis for denying Applicants' requested bidding credits. Thus, reinstating and granting the applications for the Defaulted Licenses will serve the objectives of Section 1.2109(c) by ensuring that the licenses go to the parties who value them the most.

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[205] 47 C.F.R. § 1.3.

[206] *See, e.g., Iowa Network Access Division, Tariff F.C.C. No. 1*, Memorandum Opinion and Order, FCC 18-105 at ¶ 19 (rel. July 31, 2018) (citing *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990)).

[207] *See supra* note 189 and accompanying text.

[208] *Implementation of Section 309(j) of the Communications Act - Competitive Bidding*, 9 FCC Rcd 2348, 2360 ¶¶ 69, 70-71 (1994).

Second, the Commission retains discretion to reinstate and grant license applications retroactively—*i.e.*, "*nunc pro tunc*"—even when there is no application pending before it. While the Commission typically takes this action in the context of late-filed license renewal applications,[209] the Commission has authority to reopen applications, including where "the result is manifestly unconscionable."[210] Here, it would be manifestly unconscionable to bar Applicants from recovering the Defaulted Licenses and the interim penalties given that they defaulted on the licenses and incurred the penalties as a direct consequence of the Commission's legal errors. Thus, given that Applicants have successfully cured the *de facto* control concerns, reinstatement and grant of the applications for the Defaulted Licenses *nunc pro tunc* is warranted.

VIII. CONCLUSION.

As discussed above, Applicants' revised agreements cure the *de facto* control issues identified by the Commission in the *2015 Order*. If the Commission believes that further amendments to the revised agreements are necessary, SNR and Northstar stand ready to discuss with the Commission additional proposed changes and further revise the agreements, as necessary. If the Commission grants the bidding credits, it should (i) return the interim default

[209] *See, e.g., Forty-One Late-Filed Applications for Renewal of Educational Broadband Service*, 22 FCC Rcd 879 (2007) (granting waivers *nunc pro tunc* to 41 late-filed Educational Broadband Service renewal applications); *Sweet Briar Institute*, Order, 22 FCC Rcd 887 (2007)*; Application for Renewal of License for Educational Broadband Service Station WNC586*, 24 FCC Rcd 8088, 8093 ¶ 16 (2009) ("Under the Commission's policy regarding treatment of late-filed renewal applications in the Wireless Radio Services, renewal applications that are filed up to thirty days after the expiration date of the license will be granted *nunc pro tunc* if the application is otherwise sufficient under our rules.").

[210] *See Radio Para La Raza*, 40 F.C.C. 2d 1102, 1104 ¶ 6 (1973) (citing *Hazel-Atlas Co. v. Hartford Co.*, 322 U.S. 238 (1944); *Greater Bos. Tel. Corp. v. FCC*; *KIRO, Inc. v. FCC*, 438 F.2d 141 (D.C. Cir. 1970)); *see also Interstate Communications, Inc.*, 22 FCC Rcd 13269, 13270 ¶ 5 n.10 (2007).

penalties Applicants paid in connection with the Defaulted Licenses; and (ii) reinstate and grant the applications for the Defaulted Licenses.

Respectfully submitted,

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October 22, 2018

Declaration of John Muleta

I am John Muleta, the Chief Executive Officer and sole member of Atelum, LLC. I have reviewed the foregoing Consolidated Opposition of SNR Wireless LicenseCo, LLC ("SNR") and Northstar Wireless, LLC (Oct. 22, 2018), and I hereby declare, under penalty of perjury, that the facts stated therein with respect to SNR are true and correct to the best of my knowledge, information, and belief.

Executed this 22nd day of October, 2018.

/s/ John Muleta
John Muleta

Declaration of Allen M. Todd

I am Allen M. Todd, General Counsel and Assistant Secretary at Doyon, Limited. I have reviewed the foregoing Consolidated Opposition of SNR Wireless LicenseCo, LLC and Northstar Wireless, LLC (Oct. 22, 2018) ("Northstar"), and I hereby declare, under penalty of perjury, that the facts stated therein with respect to Northstar are true and correct to the best of my knowledge, information, and belief.

Executed this 22nd day of October, 2018.

/s/ Allen M. Todd
Allen M. Todd

Exhibit A – Drs. David J. Salant and Gary Biglaiser, Reply to the Preliminary Economic Analysis of the AWS-3 Auction by Dr. Leslie Marx

Reply to the "Preliminary Economic Analysis of the AWS-3 Auction" by Dr. Leslie Marx

David J. Salant
Toulouse School of Economics and FTI Consulting

and

Gary Biglaiser
University of North Carolina, Chapel Hill

October 2018

I. INTRODUCTION

(1) David J. Salant is a Professor Associé at the Toulouse School of Economics, Senior Managing Director, FTI Consulting, Inc., Research Associate at Columbia CITI, and the author of *A Primer on Auction Design, Management and Strategy*," MIT Press 2014. He spent ten years in research and development at Bell and GTE (now Verizon) Labs. He has served as a designated bidder in a number of FCC spectrum auctions, including in Auction 58 for Alaska Native Broadband 1 and Alaska Native Broadband 2 (did not bid); Auction 66 for Denali Spectrum License, LLC; Auction 73 for Alltel; and Auction 1002 for Comcast. In addition, he served on-site leading the auction strategy and advising bidders in FCC Auctions 4 (PCS), 7 (Specialized Mobile Radio), 22 (PCS), 35 (PCS), 49 (Lower 700 MHz), 58 (PCS), 66 (AWS-1), 73 (700 MHz), 97 (AWS-3), and 1002 (Incentive Auction). His on-site advisory experience also includes spectrum auctions in Australia, Austria, Belgium, Brazil, Canada, India, Italy, Mexico, the Netherlands, Portugal, Singapore, Spain, the United Kingdom, and Switzerland. His auction design consulting experience includes advising the FCC on Combinatorial Bidding (with Vernon Smith), Industry Canada, the Mexico SCT, the Italian Ministry of Communications, the Singapore IDA, the Australia ACCC, and the Pakistan Ministry of Communications. Additional information about his professional experience can be found in his curriculum vitae, attached hereto as Appendix A.

(2) Gary Biglaiser is a Professor in the Economics Department of the University of North Carolina, Chapel Hill, and an associate editor of the Rand Journal of Economics. He has served on various other editorial boards in the past, and on various scientific conference committees. He served as the Assistant Chief Economist at the FCC from 1997 to 1998. He was also a visiting scholar at the Portuguese Competition Authority, where he worked on competition policy. Furthermore, he has worked with bidders on spectrum and energy auctions throughout the world. Additional information about his professional experience can be found in his curriculum vitae, attached hereto as Appendix B.

(3) We have examined the report entitled "Preliminary Economic Analysis of the AWS-3 Auction" by Dr. Leslie Marx ("Report") filed by VTel Wireless, Inc. ("VTel") in the Commission's proceeding on remand regarding the Northstar Wireless, LLC ("Northstar") and SNR Wireless LicenseCo, LLC ("SNR") applications for Auction 97 bidding credits. We have been asked to provide our own analysis of the participation in Auction 97 by Northstar, SNR, and American AWS-3 Wireless I L.L.C. ("DISH") and to evaluate the claims on which the Report relies in concluding "that DISH exercised *de facto* control over Northstar and SNR" during Auction 97.[1]

(4) In this report, we demonstrate that:

(A) based on the publicly-available Auction 97 bidding data, the bidding by Northstar and SNR was consistent with each of these firms acting in its independent economic self-interest;

[1] Report at ¶ 19.

(B) based on the publicly-available Auction 97 bidding data, the bidding by Northstar and SNR reflected the influences of the FCC's auction rules, including the bidding eligibility requirements, and the disclosed joint bidding agreements among the parties; and

(C) contrary to Dr. Marx's assertions, it would be unreasonable to conclude from the Auction 97 bidding data that there must have been a single entity controlling the bidding of Northstar, SNR, and DISH.

(5) We reached these conclusions on the basis of our analysis of the publicly-available Auction 97 bidding data, the impact on bidder incentives of the FCC's auction rules and procedures, and our knowledge of and experience with prior FCC auctions. Neither of us was a member of the Northstar, SNR, or DISH bidding teams or otherwise advised Northstar, SNR, or DISH in connection with Auction 97. Our analysis of the publicly-available Auction 97 bidding data makes clear that the Report is logically flawed and highly speculative.

(6) The remainder of this report proceeds as follows:

(A) in Section II, we discuss stated bases for the claims in the Report;

(B) in Section III, we analyze the publicly available Auction 97 bidding data and the FCC's auction rules and procedures to assess the claim of "control" by a single party as it relates to each of seven arguments advanced in the Report and show that the bidding of Northstar, SNR, and DISH in the auction was consistent with each firm acting in its own, independent economic self-interest;

(C) in Section IV, we address post-auction events discussed in the Report; and

(D) in Section V, we offer concluding remarks.

II. STATED BASES FOR THE CLAIMS MADE IN THE REPORT

(7) The Report claims that DISH had *de facto* control of Northstar and SNR during Auction 97.[2] This claim is based on:

(A) the faulty logical premise that members of a joint bidding agreement with divergent interests would necessarily bid differently in all (or most) situations than they would if they were subject to common ownership;

(B) a selection of facts that purportedly support that faulty logic, such as the use of double bidding and DISH's decision to essentially stop bidding after round 21; and

(C) assumptions that are either unsupported, speculative, or contrary to fact.

(8) The Report considers only two divergent hypotheses: either "(1) Northstar and SNR acted to advance their own interests" or "(2) Northstar and SNR acted on behalf of and under

[2] Report at ¶ 19.

the control of DISH."[3] Critically, the Report ignores the possibility that Northstar and SNR participated in Auction 97 in *cooperation* with DISH and with one another, consistent with the joint bidding agreements entered into by the parties and disclosed to the Commission—and the public—prior to Auction 97.

(9) As a result, much of the "evidence" the Report cites as proof of DISH's *de facto* control consists of behavior that is commonplace when two or three parties with independent interests are part of a joint bidding arrangement. While at times members of a joint bidding agreement with divergent interests will likely bid in the same way as they would if these bidders were subject to common ownership, there are other situations in which they will likely not. The Auction 97 data shows some evidence of the latter. We also did not observe any instances in which the bidding behavior of Northstar, SNR, and DISH could only result from control by DISH.

(10) In Section II of the Report, the analysis begins with a general discussion of the economics of competitive and collusive bidding strategies. Here, we address four claims made in that section.

(A) The Report begins by claiming that "[a]uction theory teaches that in an ascending-bid auction for a single object, it is a 'dominant strategy' for competing bidders to remain active in the auction until the price reaches the level of their willingness to pay and then to exit the auction."[4] Yet, auction theory teaches that "bidding one's value" is a dominant strategy only under a rather limited set of circumstances. In auctions such as Auction 97—a multi-unit auction of nonidentical objects with budget constraints and interdependent values—optimal bidding strategies must take into account both the willingness of other bidders to pay and their available resources.[5]

(B) The Report then claims that the value of a portfolio of spectrum licenses increases when the portfolio provides coverage over a contiguous geographic region: "Even a bidder contemplating only regional operation, would be expected to value uniform coverage over the region of operation, with perhaps a value for incremental bandwidth over relatively more populated geographic areas."[6] While the ability to provide coverage over an area can provide bidders with an incentive to bid on a contiguous market portfolio, bidders face other, and at times, countervailing incentives. For example, bidders that have cable and telephony businesses may be interested in building a wireless spectrum portfolio that generally tracks their existing service area, while bidders who already own spectrum may be looking for incremental bandwidth over more populated areas. Even new entrants contemplating only regional operations may find a cheaper portfolio that provides less than uniform geographic coverage to be a better value than a more expensive portfolio with more uniform coverage. As discussed in

[3] Report at ¶ 4.
[4] Report at ¶ 5.
[5] Vijay Krishna, Auction Theory, Academic Press at 232-33 (2010) ("Krishna"); David J. Salant "A Primer on Auction Design." *Management, and Strategy, MIT Press* (2014).
[6] Report at ¶ 6.

Section III.F. below, the evidence from a recent spectrum auction indicates that major wireless carriers, potential entrants, and sophisticated financial investors have all purchased spectrum portfolios with far from uniform geographic coverage.

(C) Next, the Report observes that Northstar and SNR each won a portfolio of licenses with less than national coverage[7] and claims that DISH must have controlled Northstar and SNR: "The significant gaps in the geographic coverage provided by licenses won by Northstar and by licenses won by SNR effectively foreclose them from any future commercial choice except transferring all AWS-3 Auction benefit to DISH under a pre-existing agreement with DISH."[8] Yet, the Report simultaneously argues that the disclosed agreements allowed DISH to capture 100 percent of the profits arising from the purchase and operation of the spectrum licenses won by Northstar and SNR.[9] These arguments are contradictory. If, as the Report claims, "the disclosed agreements offer no way for Northstar and SNR to share in the gains,"[10] DISH would not have an incentive to prevent them from obtaining nationwide coverage.

(D) Finally, the Report inserts a discussion of the economics of bidding rings and "the question of whether the observed bidding and auction outcomes can be explained" as the result of a bidding ring.[11] We do not consider the academic literature on the economics of bidding rings to be applicable to the joint bidding agreements at issue here. Bidding rings often operate over a sequence of single-object auctions and are not typically enforced by contract, whereas the joint bidding agreements at issue here were contracts covering a single auction. The question at issue here is whether or not an analysis of the parties' bidding behavior allows one to conclude that Northstar and SNR were acting under the *de facto* control of DISH and not pursuing their own economic interests subject to the incentives created by their agreements with each other and DISH and the auction format.[12] The

[7] Report at ¶ 16.
[8] Report at ¶ 16.
[9] Report at ¶ 15.
[10] Report at ¶ 15.
[11] Report at ¶ 10.
[12] More specifically, the Report first observes that the relevant academic literature has found two defining behavioral characteristics of bidding rings: members do not compete against themselves and they have a secondary process to allocate "advantaged purchases" among themselves. Report at ¶ 15. The Report then observes that Northstar and SNR did not employ a secondary process to allocate purchases and concludes that this constitutes evidence of de facto control. However, as we discuss below, Northstar and SNR's behavior was consistent with the behavior that one would expect from two bidders that had agreements in place under which they would coordinate their bidding in the auction and potentially use their spectrum portfolio to construct compatible systems that could be consolidated if doing so created value. Before participating in Auction 97, Northstar and SNR each entered into two sets of bidding agreements. The stated purpose of the first set of agreements between Northstar and DISH and SNR and DISH was to permit the parties to each agreement to "coordinate bidding in the Auction to comply with

literature on simultaneous multi-round ("SMR") auctions has long recognized that bidders have the incentive to manage their eligibility by bidding on items that they did not value to maintain activity without showing their hand with respect to items for which they were interested in bidding (so-called "parking").[13] This allows bidders to defer the timing of their commitments until after they have had a chance to observe rivals' bids. Double (and triple) bidding decreases the probability that each bidder will be the provisional winning bidder, which decreases the expected commitment.

III. AUCTION 97 BIDDING DATA DO NOT SUPPORT THE CONTROL ASSUMED IN THE REPORT

(11) The Report contains seven main claims (section headings V.A-G) upon which it bases its conclusion that Northstar and SNR were under the *de facto* control of DISH during Auction 97:

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spectrum aggregation limits or policies that may be applied under the FCC Rules . . . to facilitate the consolidation of their systems as and to the extent contemplated in the [governing LLC agreement], and to facilitate the Business of the Company as set forth in the" governing LLC agreement. (Report at ¶ 10.) Northstar Wireless, LLC FCC Form 601, ULS File Number 0006670613, Exhibit D: Bidding Protocol & Joint Bidding Arrangement (filed Apr. 20, 2015), Bidding Protocol and Joint Bidding Arrangement, by and among Doyon, Limited, Northstar Manager, LLC, Northstar Spectrum, LLC, Northstar Wireless, LLC, American AWS-3 Wireless II L.L.C., and American AWS-3 Wireless I L.L.C., entered into as of September 12, 2014, Section 4.) The second agreement was among Northstar, SNR, and DISH and its stated purpose was to permit Northstar, SNR, and DISH to "coordinate bidding in the Auction to fulfill their respective strategic purposes, to comply with spectrum aggregation limits or policies that may be applied under the FCC rules, to facilitate roaming arrangements among the Parties or their affiliates, and to facilitate consolidation of their systems to the extent contemplated by" their respective governing agreements. Northstar Wireless, LLC FCC Form 601, ULS File Number 0006670613, Exhibit D: SNR Joint Bidding Agreement (filed Mar. 23, 2015), Joint Bidding Arrangement, by and between American AWS-3 Wireless I L.L.C., American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC, Northstar Spectrum, LLC, Northstar Manager, LLC, Doyon, Limited, American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC, SNR Wireless HoldCo, LLC, and SNR Wireless Management, LLC, entered into as of September 12, 2014, Section 1.)

[13] David Porter, et al. "Combinatorial auction design" *Proceedings of the National Academy of Sciences* 100.19 (2003): 11153-57; David J. Salant, "Up in the air: GTE's experience in the MTA auction for personal communication services licenses" *Journal of Economics & Management Strategy* 6.3 (1997): 549-72; Lawrence M. Ausubel, and Oleg V. Baranov. "Market design and the evolution of the combinatorial clock auction" *American Economic Review* 104.5 (2014): 446-51.

- "The sophistication and careful orchestration of the bidding strategy suggests advance planning and direction from DISH."[14]
- "The rapid transition of licenses from DISH to Northstar and SNR is consistent with Northstar and SNR being under DISH's *de facto* control."[15]
- "The pattern of joint bidding is consistent with Northstar and SNR being under DISH's *de facto* control."[16]
- "The acceptance of random assignments is consistent with Northstar and SNR being under DISH's *de facto* control."[17]
- "Coordination surrounding withdrawals is consistent with Northstar and SNR being under DISH's *de facto* control."[18]
- "Gaps in geographic coverage for Northstar and SNR are consistent with Northstar and SNR being under DISH's *de facto* control."[19]
- "Observed outcomes could not reasonably have happened by chance."[20]

Yet, as shown below, the Report completely fails to identify evidence that would hold only when DISH, Northstar, and SNR are under common control and would not hold for the case of a joint bidding group that communicates during the auction.

(12) Importantly, the Report also does not consider the effects of the Commission's auction rules and procedures on bidding choices. For example, to be eligible to bid in Auction 97, an applicant was required to make a pre-auction upfront payment to the Commission.[21] Each license in the auction was assigned a number of "bidding units," and the amount of the upfront payment established the number of bidding units—and, thus, licenses—the applicant could bid on and hold a provisionally winning bid on in a given round.[22] The upfront payment, therefore, established the applicant's initial bidding eligibility (eligibility bidding units). In the auction, bidders were required to be active on a specific percentage of their then-current bidding eligibility during each round of the auction to avoid losing bidding eligibility going forward.[23] A bidder wishing to maintain its then-current bidding eligibility was required to be active on licenses representing at least 80 percent of its bidding eligibility in each bidding round during stage one of the

[14] Report at ¶ 31 (heading).
[15] Report at ¶ 37 (heading).
[16] Report at ¶ 44 (heading).
[17] Report at ¶ 46 (heading).
[18] Report at ¶ 49 (heading).
[19] Report at ¶ 56 (heading).
[20] Report at ¶ 60 (heading).
[21] *Auction of Advanced Wireless Services (AWS-3) Licenses Scheduled for November 13, 2014; Notice and Filing Requirements, Reserve Prices, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 97, Public Notice*, 29 FCC Rcd 8386, 8422-23 (2014) ("*Auction 97 Procedures*").
[22] *Auction 97 Procedures*, 29 FCC Rcd at 8423.
[23] *Auction 97 Procedures*, 29 FCC Rcd at 8431.

auction and 95 percent during stage two of the auction.[24] During Auction 97, the Commission eventually transitioned to stage three with a 98 percent activity requirement[25] and stage four with a 100 percent activity requirement.[26] These activity requirements forced bidders to remain active on an increasingly greater percentage of bidding units to avoid losing eligibility and the ability to bid.

(13) Further, in Auction 97, the FCC applied a set of minimum acceptable bids and bid increments. The minimum acceptable bid amount for a license was equal to its minimum opening bid amount until there was a provisionally winning bid on the license.[27] Then, after a provisionally winning bid was posted, the minimum acceptable bid amount for that license had to be equal to the amount of the provisionally winning bid plus a percentage of that bid amount calculated using an activity-based formula.[28] Bid increments are pre-defined acceptable bid amounts above the last provisionally winning bid.[29] The rules for Auction 97 provided for nine set bid amounts for each license in each round (the next minimum acceptable bid amount and eight higher bid amounts).[30] The FCC would not accept a bid for a license that was not at one of those increments. Parties bidding on the same license in the same round would typically place the same bid—the first minimum accepted bid increment—for the license. Thus, the amount of a bid, the timing of a bid, and tactics related to bidding were all affected by these FCC requirements.

(14) In the sections that follow, we discuss each of the Report's seven claims and demonstrate that the bidding conduct is consistent with Northstar and SNR each acting in their independent economic self-interest. Moreover, our analysis demonstrates that it is not reasonable to conclude that a single entity controlled the bidding of DISH, Northstar, and SNR.

A. ON THE "SOPHISTICATED AND CAREFUL ORCHESTRATION" OF THE JOINT BIDDING STRATEGY

(15) The Report claims that the sophistication and careful orchestration of the bidding strategy of Northstar and SNR suggests advance planning and direction from DISH.[31] According to the Report, it would not have been in Northstar and SNR's economic interests to develop such a bidding strategy and engage in the related preparatory work before the

[24] *Auction 97 Procedures*, 29 FCC Rcd at 8432.
[25] *https://auctionbidding.fcc.gov/auction/home/announcementDetail.htm?ann_id=1175.*
[26] *https://auctionbidding.fcc.gov/auction/home/announcementDetail.htm?ann_id=1187.*
[27] *Auction 97 Procedures*, 29 FCC Rcd at 8442.
[28] *Auction 97 Procedures*, 29 FCC Rcd at 8442.
[29] *Auction 97 Procedures*, 29 FCC Rcd at 8443.
[30] *Auction 97 Procedures*, 29 FCC Rcd at 8386, 8443-44.
[31] Report at ¶ 31 (heading).

auction "because it involved costs to themselves with benefits accruing jointly to DISH and [Northstar and SNR]."[32]

(16) In support of this claim, the Report creates a narrow model to analyze the bargaining setting between the three members of the joint bidding agreements: Northstar, SNR, and DISH.[33] Before responding, we note that there is no consensus among economists regarding in what single way bargaining should be modeled in situations where there are more than two participants. Unlike the model presented in the Report, economics does not provide a single, clear prediction of the division of surplus that will result from bargaining among three or more participants.

(17) As to the model itself, the assumptions made cannot be justified for the three parties that were members of the joint bidding arrangements for Auction 97. First, the Report assumes that DISH obtains all the benefits associated with achieving nationwide coverage from combining the license portfolios of Northstar and SNR.[34] However, as the Report acknowledges, "bargaining power is related to the bargainers' outside option."[35] In assuming that DISH will capture all of these benefits—represented by "C" in the Report—it effectively assumes that Northstar and SNR have no outside option that would allow them to realize any of the incremental benefits of combining their portfolios. This completely ignores the fact that a third party may value the synergies that can be generated by the combination of the licenses of Northstar and SNR; one could call this value for third parties C'. The larger these synergies, C', the more the third party is willing to pay to acquire both Northstar's and SNR's licenses and the greater the financial benefit would be to each of them.

(18) Second, the Report only evaluates the strategic interaction as if each pair of bargainers—DISH-Northstar and DISH-SNR—were in complete isolation from the other pair.[36] The Report avoids any consideration of the so-called "bargaining hold-up problem." To understand the hold-up problem, suppose that DISH comes to agreement with one of the members of the bidding agreement. Then, the other member can hold out for a large amount of the additional surplus that the Report claims is available because it is necessary to complete a national footprint. This hold-out firm will then be able to extract a large amount of the available surplus in the subsequent bilateral bargaining game with DISH. And, since both Northstar and SNR could be in the position to be the second firm to agreement, each will demand a large fraction of the surplus with DISH to get them to be the first one to come to agreement with DISH. By avoiding any consideration of this problem, the Report reveals its unreasonably narrow approach.

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[32] Report at ¶ 31.
[33] Report at ¶ 32.
[34] Report at ¶ 32.
[35] Report at ¶ 8.
[36] See Report at ¶ 8 (discussing "the individual bargaining power of each" of Northstar and SNR).

(19) The Report also argues that Northstar and SNR could not implement a sophisticated and coordinated bidding strategy without a great deal of advanced planning and direction from DISH because "[t]here was no mechanism in place that would allow Northstar or SNR to direct the bidding of DISH and no mechanism that would allow Northstar or SNR to direct the bidding of the other in the absence of intermediation by DISH."[37] However, Northstar, SNR, and DISH entered into—and disclosed—a joint bidding agreement among all three parties.[38] The FCC wrote in 2015:

> Although Section 1.2105(c)(1) of the Commission's rules generally prohibits short-form applicants for licenses in the same or overlapping geographic license areas from communicating with each other, directly or indirectly, about bids or bidding strategies, under the rules applicable to Auction 97 they were permitted to do so if they identified each other on their short-form applications as parties with whom they had entered into agreements under Section 1.2105(a)(2)(viii) of the Commission's rules. SNR, Northstar, and DISH disclosed in their Form 175 Short-Form Applications prior to the auction that they had entered into Joint Bidding Agreements between and among each other and specifically stated that all of the parties would "coordinate regarding bids, bidding strategy and post-auction market structure" . . . .[39]

Contrary to the Report, no DISH intermediation would have been needed for Northstar and SNR to coordinate their bidding, and Northstar and SNR could also coordinate bidding with DISH.

(20) Finally, the Report claims that Northstar, SNR, and DISH failed to disclose their "bidding strategy," including what the Report characterizes as "joint bidding . . . to manage eligibility . . . ."[40] The FCC already rejected the same claim by VTel on the grounds that its "competitive bidding rules in effect at the time of Auction 97 simply required that the applicants submit, as part of their Form 175 Short-Form Applications, a list of the names of any joint bidding agreements."[41] The FCC even added that "had the Applicants disclosed more detail about what they intended to accomplish through joint bidding with DISH, such disclosure might have communicated bidding strategies to other applicants in violation of the prohibited communications rule, 47 C.F.R. § 1.2105(c)."[42]

B. ON THE PURPORTED "RAPID TRANSITION OF LICENSES FROM DISH TO NORTHSTAR AND SNR"

[37] Report at ¶ 31.
[38] *Northstar Wireless, LLC, SNR Wireless LicenseCo, LLC, Applications for New Licenses in the 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 Bands*, Memorandum Opinion and Order, 30 FCC Rcd 8887, 8896, 8899-900 (2015) (*"FCC 2015 Order"*).
[39] *FCC 2015 Order*, 30 FCC Rcd at 8942 (footnote omitted).
[40] Report at ¶¶ 34-35.
[41] *FCC 2015 Order*, 30 FCC Rcd at 8942.
[42] *FCC 2015 Order*, 30 FCC Rcd at 8942 n.382.

(21) According to the Report, after DISH dropped out of Auction 97, its provisionally winning bids were transferred to Northstar and SNR at an unusually high rate and the observed "bidding behavior supports the conclusion that Northstar and SNR were directed by DISH to bid on the licenses for which DISH was the provisionally winning bidder."[43] This claim has three elements:

(A) DISH was in communication with Northstar and SNR during the auction;[44]

(B) when DISH dropped out of the auction, Northstar and SNR were directed by DISH to bid on the licenses for which DISH was the provisionally winning bidder;[45] and

(C) the ultimate disposition of licenses for which DISH was the provisionally winning bidder at some point in Auction 97 "contradicts the notion that DISH might have decided that those licenses were undesirable."[46]

We respond to each element below.

(22) First, according to the Report, "[g]iven the anonymous format of the auction, the only way for Northstar and SNR to know the identities of the licenses for which DISH was the provisionally winning bidder was for DISH to inform them directly."[47] As explained, however, the FCC has already made clear that "SNR, Northstar, and DISH disclosed . . . that they had entered into Joint Bidding Agreements between and among each other and specifically stated that all of the parties would 'coordinate regarding bids, bidding strategy and post-auction market structure' . . . ."[48] Thus, according to the FCC, the three parties were permitted to communicate "with each other . . . about bids or bidding strategies . . . ."[49]

(23) Second, the Report asserts that "Northstar and SNR were directed by DISH to bid on the licenses for which DISH was the provisionally winning bidder."[50] According to the Report, "91% of licenses for which DISH lost its status as provisionally winning bidder in rounds 20-22 were next held by Northstar or SNR as the new provisionally winning bidder."[51] The Report insists that a DISH directive is the only possible explanation for that bidding due to the "anonymous format, the unusually high rate at which DISH lost its status as provisionally winning bidder on licenses in rounds 21 and 22, and the high rates of transfer of DISH's provisionally winning bidder status to Northstar and SNR . . . ."[52] But, if Northstar and SNR shared similar valuations of the subject licenses, which is

[43] Report at ¶ 41.
[44] Report at ¶ 41.
[45] Report at ¶ 41.
[46] Report at ¶ 42.
[47] Report at ¶ 41.
[48] FCC 2015 Order, 30 FCC Rcd at 8942 (footnote omitted).
[49] FCC 2015 Order, 30 FCC Rcd at 8942.
[50] Report at ¶ 41.
[51] Report at ¶ 39.
[52] Report at ¶ 41.

plausible given their joint bidding arrangements, the Report cannot reasonably assume that the only explanation for such conduct was that they were controlled by DISH.

(24) DISH would gain little by subsequent bids of Northstar and SNR on the licenses for which DISH had been the provisionally winning bidder at exit. 1,614 licenses were offered in Auction 97. DISH effectively stopped bidding after round 21, but the auction did not end until round 341. In round 21, the value of DISH's provisionally winning bids was approximately $313 million in the aggregate. The licenses on which it held such provisionally winning bids eventually sold for $769 million in the aggregate and on average each of those licenses received an additional 13 bids. DISH exited the auction at a very early stage marked by high license turnover, calling into question what the "handoff" alleged in the Report could have been expected to achieve.

(25) Moreover, bidding data confirm that Northstar and SNR did not change their bidding behavior after DISH withdrew in any way that would suggest control by a third party. We first identify each license on which DISH *placed a bid on* in Auction 97 ("DISH licenses"). We then calculate the percentage of each auction participants' bids on a DISH license both before and after DISH exited (i.e., we calculate the percentage of bids on a DISH license for rounds 1-22 and rounds 23-341). The FCC data show that DISH was active on 491 licenses and submitted 1,268 bids in total—1,267 bids in rounds 1-22 and a single bid in round 24. During the auction, 33 other bidders placed a bid on at least one DISH license, with the most active bidders for these licenses including: 2014 AWS Spectrum Bidco Corporation (Jarvinian Partners), Advantage Spectrum, L.P., AT&T Wireless Services 3 LLC, Cellco Partnership d/b/a Verizon Wireless, Northstar, SNR, Joseph A. Sofio, T-Mobile License LLC, and Tristar License Group, LLC. As shown in Table 1, these bidders vary significantly in the percentage bids they placed on DISH licenses over the first 22 rounds. For example, 100 percent of 2014 AWS Spectrum Bidco's bids during these rounds were on DISH licenses, Northstar and SNR placed 62 percent and 55 percent of their respective bids on DISH licenses, and Sofio bid on DISH licenses 14 percent of the time.

Table 1: Bidding on DISH and Non-DISH Licenses (Rounds 1-22)

Bidder Name	Number of New Bids on DISH licenses (Round 1-22)	Number of New Bids on Non-DISH licenses (Round 1-22)	Percentage of Bids on DISH licenses (Round 1-22)
2014 AWS	193	0	100%
Advantage	154	769	16.7%
DISH	1267	0	100%
AT&T	636	2395	21.0%
Cellco	992	4265	18.9%
Northstar	1509	925	62.0%
SNR	976	791	55.2%
Sofio	4	24	14.3%
T-Mobile	594	2483	19.3%
Tristar	247	1161	17.5%
Other	588	3352	14.9%

(26) Under the Report's logic, we would expect that, starting in round 23, Northstar and SNR would have focused on the DISH licenses so that the DISH licenses would account for an increased share of their bidding. However, as shown in Table 2, after DISH exited the auction, the percentage of Northstar bids made on DISH licenses *fell* from 62 percent to 46 percent, while the percentage of SNR bids on DISH licenses *fell* from 55 percent to 44 percent. This finding suggests that DISH did not control Northstar and SNR.

Table 2: Bidding on DISH and Non-DISH Licenses (Rounds 23-341)

Bidder Name	Number of New Bids on DISH licenses (Round 23-341)	Number of New Bids on Non-DISH licenses (Round 23-341)	Percentage of Bids on DISH licenses (Round 23-341)
2014 AWS	826	0	100%
Advantage	40	1315	2.9%
DISH	1	0	100%
AT&T	120	846	12.4%
Cellco	115	1041	9.9%
Northstar	1283	1519	45.8%
SNR	1263	1639	43.5%
Sofio	601	593	50.3%
T-Mobile	157	1984	7.3%
Tristar	177	195	47.6%
Other	179	4158	4.1%

(27) Finally, the Report notes that DISH was the provisionally winning bidder on over $7 billion of licenses at some point in Auction 97 prior to exiting.[53] According to the Report, "85.3% of those licenses were ultimately purchased by Northstar or SNR" at net prices that were "roughly twice as much for the licenses relative to the amount of DISH's last provisionally winning bid . . . ."[54] The Report argues that these points "contradict the notion that DISH might have decided that those licenses were overpriced at the prices at which DISH exited."[55]

(28) DISH's decision to place $7 billion in bids on its own account when Northstar and SNR could have placed the same bids and paid only $5.25 billion suggests that DISH placed a higher value on licenses it purchased than on licenses purchased by Northstar or SNR. Moreover, the bidding data also fail to support the view that DISH's decision to exit the auction after 22 rounds of bidding is indicative of *de facto* control of Northstar and/or SNR. The data is much more consistent with the hypothesis that DISH, which was not eligible for bidding credits, planned to acquire a nationwide footprint in the AWS-3 auction if prices were low enough and decided to drop out as prices escalated.

C. ON THE PATTERN OF DOUBLE BIDDING

(29) The Report claims that a pattern of double bidding is consistent with Northstar and SNR being under DISH's *de facto* control:[56] "Key examples of this type of bidding are late-stage paired bidding by Northstar and SNR"[57] in which "both Northstar and SNR in the same round bid against the provisionally winning bidder for a license for which there had been no new bids for a large number of rounds."[58] The Report argues that "[i]t is not credible that the late-stage paired bids by Northstar and SNR occurred in the absence of either direction by a third party (such as DISH) or direct coordination between Northstar and SNR . . . ."[59] The Report attempts to "rule out" direct coordination "because the paired bids make little sense if Northstar's and SNR's bids were motivated by the goal of having a particular one of them win the license . . . ."[60]

(30) On each of these points, the Report is wrong. As a threshold matter, double bidding benefits bidders working to comply with the FCC's activity requirements.[61] As noted above, bidders were required to be active on a specific percentage of their then-current bidding eligibility during each round of the auction to avoid losing eligibility going

[53] Report at ¶ 42 and Figure 6.
[54] Report at ¶ 42.
[55] Report at ¶ 42.
[56] Report at ¶ 44.
[57] Report at ¶ 44.
[58] Report at ¶ 44.
[59] Report at ¶ 44.
[60] Report at ¶ 44.
[61] *See also* Report at ¶ 35 (describing joint bidding as part of a strategy to "manage eligibility").

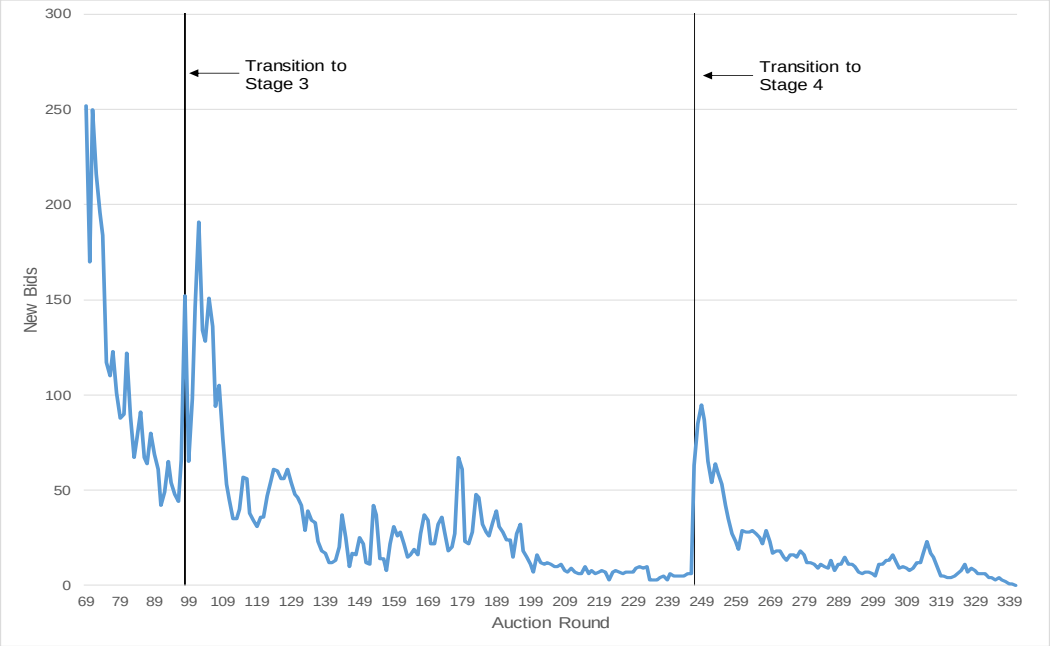
forward.[62] In cases of double bidding, both bids count as bidding activity, but only one bid can ever result in a provisionally winning bid because the Commission employs "a random number generator to select a single provisionally winning bid in the event of identical high bid amounts being submitted on a license in a given round (i.e., tied bids)."[63] If one of the double bids becomes the provisionally winning bid, the other coordinating bidder retains uncommitted bidding eligibility to use in the next round.

(31) Suppose that coordinating bidders A and B are interested in licenses covering three regions R1, R2, and R3, each region with approximately the same number of Bidding Units, and that there is believed to be two rival bidders also each interested in one, but not two or more, of these regions. A and B can then both bid on one region, say R1, and see which, if any, of the other two regions receives new bids. If one third party is interested in R1, then A and B can shift their bidding to R2 and R3 in the next round. If no third party is interested in R1, the losing bidder as between A and B can shift its bidding to R2 or R3. By double bidding in this fashion, A and B can preserve bidding eligibility and flexibility.

(32) Further, as noted, the Report argues that the probability is remote that, in the absence of DISH control, Northstar and SNR would bid in the same round for licenses on which there had been no bids for more than 50 rounds.[64] As discussed, however, no DISH intermediation would have been needed for Northstar and SNR to coordinate their bidding, as it would have been in the interest of Northstar and SNR to coordinate in the fashion described. In Auction 97, the FCC transitioned to stage four and the 100 percent activity requirement in round 247.[65] During Auction 97, stage transitions were associated with a spike in bidding activity. These spikes in bidding activity were the result of the auction rules, and, in particular, the increase in the activity requirement that accompanied each stage transition. An increase in the activity requirement forces auction participants to either accept a reduction in available bidding credits or to place new bids. For example, as shown in Figure 1, bidding activity spiked in round 98 when the auction transitioned to stage 3 and the activity requirement increased from 95 percent to 98 percent. Likewise, bidding activity spiked in round 247 when the auction transitioned to stage 4 and the activity requirement increased from 98 percent to 100 percent.

[62] *Auction 97 Procedures*, 29 FCC Rcd at 8431.
[63] *Auction 97 Procedures*, 29 FCC Rcd at 8444.
[64] Report at ¶ 60.
[65] *https://auctionbidding.fcc.gov/auction/home/announcementDetail.htm?ann_id=1187.*

Figure 1: Auction 97 Bidding Activity at Transitions to Stages 3 and 4 Depicting Number of New Bids



(33) As shown in Figure 2, the late-stage double bidding to which the Report refers started in round 247 and, as depicted in Table 3, appears to have had the effect of managing the eligibility of Northstar and SNR under the 100 percent activity requirement.

Figure 2: Number of Auction 97 Licenses with Double Bids by Northstar-SNR In Stages 3 and 4

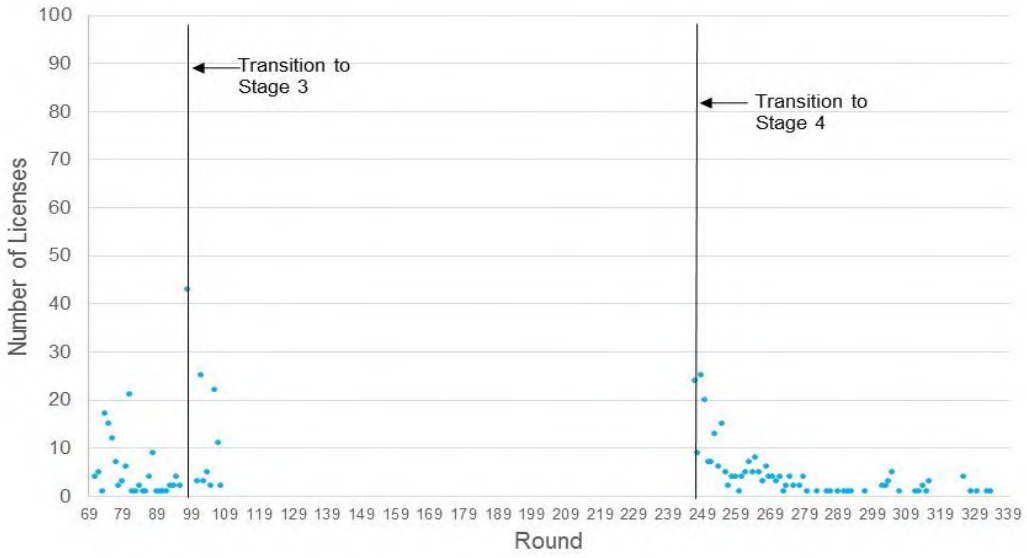


Table 3: Northstar and SNR Auction 97
Bidding Eligibility in Rounds 246-251

Round	Number of Licenses with Double Bids	Total Bidding Units Associated	Northstar's Eligibility	SNR's Eligibility
246	0	0	166,566,480	127,370,256
247	24	1,370,500	166,566,480	127,370,256
248	9	257,000	166,566,150	127,370,100
249	25	573,700	166,562,600	127,370,000
250	20	504,900	166,561,200	127,362,300
251	7	657,700	166,524,150	127,362,000

D. ON THE ACCEPTANCE OF RANDOM ASSIGNMENTS

(34) The Report argues that the bidding record shows that in a large number of cases Northstar and SNR were willing to let the FCC's randomization determine the assignment of a license between the two firms, which it claims "is inconsistent with their bidding being guided by the pursuit of independent business plans."[66] The Report is wrong.

[66] Report at ¶ 46.

(35) As discussed, when two or more bidders submit matching bids for a license, the FCC randomly assigns the license to one of the bidders. As a result, the use of a double bidding tactic necessarily entails that the bidders accept random assignment. It is on this basis that the Report argues that late-stage paired bidding or even double bidding generally "make little sense if Northstar's and SNR's bids were motivated by the goal of having a particular one of them win the license . . ."[67] or were "guided by the pursuit of independent business plans."[68] But, this argument is predicated on the mistaken claim that every independent business plan requires uniform coverage over a contiguous geographic region. As discussed in greater detail below, the evidence from the FCC's most recent major auction shows that sophisticated bidders can and do purchase license portfolios that either have significant coverage gaps and/or are non-contiguous.

(36) For example, one potential independent business strategy that Northstar and SNR could reasonably have been following would be to try to maximize the MHz times population coverage ("MHz pop") of licenses won in the auction. If Northstar and SNR were following this strategy, they would have tended to bid on the same set of licenses: those with a lower cost per MHz pop. Furthermore, under this strategy Northstar and SNR would have been willing to accept the random assignment of licenses—even in late rounds. Bidding on a license increases the price of that license. To illustrate, consider a license with 5 MHz of bandwidth covering a geographic area with 1 million consumers for which the minimum bid required is $5 million, so that the current price per MHz pop of this license is $1. Suppose that Northstar and SNR each bids on the license and that SNR becomes the provisionally winning bidder as a result of the random assignment. Under the FCC's auction rules, the next minimum accepted bid on this license would increase from $5 million to $5.75 million and the price per MHz pop would increase to $1.15. As a result of this price increase, Northstar would have an incentive to use its eligibility to place bids on other licenses—i.e., those with a current price of between $1 and $1.15—instead of placing a bid on the license for which SNR just became the provisionally winning bidder.

(37) It is rational for parties to a joint bidding agreement that may wish to be part of a broader footprint to compete for each license to maximize their own license holdings and, once one of them is the provisionally winning bidder on that license, to move their eligibility to a license for which neither party is a provisionally winning bidder. A party to a joint bidding agreement wishes to maximize its own profits, and it does so by maximizing the holdings of the members of the bidding agreement *and* its share of those holdings. Allowing the FCC's random assignment mechanism to determine which bidder would be designated the provisionally winning bidder in a round would be perfectly rational and profit-maximizing for two independent bidders in their individual efforts to acquire licenses in proportion to their initial eligibility for a broader footprint at minimum costs.

(38) Moreover, by securing non-overlapping portions of a broader footprint, Northstar and SNR could maximize their individual aftermarket profits in connection with roaming agreements, joint ventures, or even selling their licenses.

[67] Report at ¶ 45.
[68] Report at ¶ 46.

(39) Finally, another observation is to assess the final winnings of the three bidders in relation to their pre-auction eligibilities. Northstar, SNR, and DISH each registered as bidding entities. The initial eligibility for each bidder—that is the number of bidding units each firm could seek to acquire at the start of the auction based on their respective pre-auction upfront payments—is shown in Table 4.

Table 4: Auction 97 Eligibility of DISH, Northstar, and SNR

	Initial	Ending	Ending / Initial	% of Initial	% NS & SNR Initial	% of Ending
Northstar	508,000,000	165,761,750	0.326	38%	55%	57%
SNR	412,000,000	126,679,850	0.307	31%	45%	43%
DISH	400,000,000	0	N/A	30%	N/A	0%
Total	1,320,000,000	292,441,600				

(40) As shown, Northstar applied for 508 million bidding units, SNR applied for 408 million, and DISH applied for 400 million. Northstar and SNR won licenses covering approximately 165 million bidding units and 126 million bidding units, respectively. As between Northstar and SNR, Northstar accounted for approximately the same share of bidding units at the beginning and end of the auction, 55 percent and 57 percent, respectively. As between Northstar and SNR, SNR also accounted for approximately the same share of bidding units at the beginning and end of the auction, 45 percent and 43 percent, respectively.

E. ON WITHDRAWAL COORDINATION

(41) The Report alleges that coordination surrounding withdrawals of provisionally winning bids is consistent with Northstar and SNR being under DISH's *de facto* control.[69] According to the Report, the strategic use of bid withdrawals by two bidders to coordinate a transfer of a license from the provisionally winning bidder to another company "provides benefits to bidders when those bidders are viewed jointly, but not to both bidders individually."[70] Arguing that "a withdrawing bidder charged with a withdrawal penalty provides a benefit to the other at its own expense," the Report asserts that "this type of strategy is inconsistent with bidders pursuing their own interests

[69] Report at ¶ 49 (heading).
[70] Report at ¶ 51.

grounded in independent business plans, but is consistent with the goals of a firm that controls two bidding entities and whose objective incorporates the joint payoffs."[71]

(42) Contrary to these assertions, the evidence from Auction 97 supports the conclusion that each of Northstar and SNR elected to withdraw certain bids in the auction in pursuit of its own business objectives. As a threshold matter, the Report's focus on the withdrawal of provisionally winning bids by Northstar and SNR appears selective because their use of withdrawals was not exceptional. There were 41 withdrawals of provisionally winning bids during the Auction 97 and Northstar and SNR were responsible for just 3 of them. Table 5 shows the withdrawals and penalties for each bidder in Auction 97. While the size of the withdrawal penalty paid by SNR was the largest among the corresponding penalties paid by bidders in Auction 97, the SNR penalty is ranked only fourth as a percentage of total amount each of those bidders spent in the auction.

Table 5: Auction 97 Provisionally Winning Bid Withdrawals by Bidder Ranked By Percentage of Total Spend

Bidder	# Withdrawals	# Penalties	Total Penalty	% of Total Spend	% of Total Spend (Net Spent after discount)
Sofio, Joseph A	2	2	$ 2,606,000	14.50%	19.33%
NE Colorado Cellular, Inc.	1	1	$ 1,454,000	4.73%	4.73%
Advantage Spectrum, L.P.	25	8	$ 3,459,000	0.77%	1.02%
SNR Wireless LicenseCo, LLC	2	1	$11,097,000	0.20%	0.27%
Smith Bagley, Inc.	1	1	$ 14,000	0.14%	0.14%
KURIAN, BEAULAH T	2	1	$ 2,000	0.07%	0.09%
Docomo Pacific, Inc.	1	-	$ -	0.00%	0.00%
Northstar Wireless, LLC	1	-	$ -	0.00%	0.00%
RigNet Satcom, Inc.	1	-	$ -	0.00%	0.00%
Big River Broadband, LLC	1	-	$ -		
RSA 1 Limited Partnership d/b/a Chat Mobility	1	-	$ -		
Tristar License Group, LLC	3	-	$ -	0.00%	
TOTAL	41	14	$18,632,000	0.13%	0.18%

(43) The point of allowing bid withdrawals, among other things, is to permit bidders to aggregate licenses where it makes sense and to allocate resources efficiently as information becomes available during the course of an auction.[72] For example, the Report points to the Northstar withdrawal of a provisionally winning bid for a Philadelphia area license (BEA012-B1) in round 239 and the SNR withdrawal of a provisionally winning bid for a Boston area license (BEA003-B1) in round 238.[73] In those cases, Northstar became the provisionally winning bidder on the Boston license in

[71] Report at ¶ 51.
[72] *Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures, Third Report and Order and Second Further Notice of Proposed Rulemaking*, 13 FCC Rcd 374, 460 (1997).
[73] Report at ¶¶ 53-54.

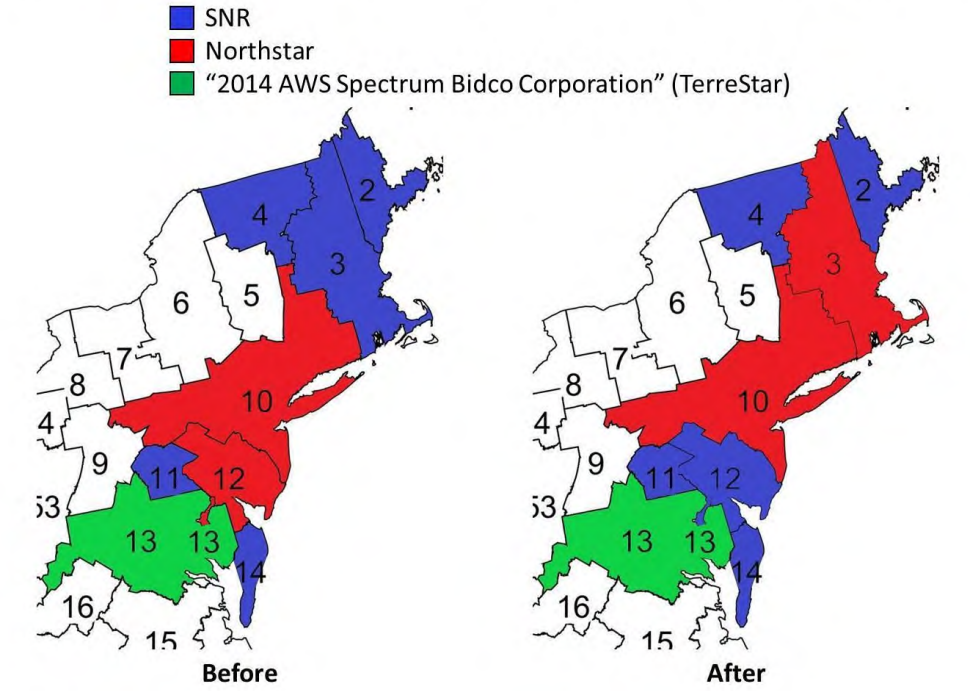
round 239 and SNR became the provisionally winning bidder on the Philadelphia license in round 240. SNR incurred the bid withdrawal penalty in connection with the Boston license because Northstar was able to bid an amount lower than the value of SNR's withdrawn bid. The Report would suggest that this was irrational if SNR was providing a benefit to another at its own expense.[74]

(44) However, if SNR wished to consolidate its license territories including Philadelphia (BEA012-B1), Harrisburg (BEA011-B1), and Delaware BEA014-B1)[75]—see Figure 3 below—it would not be irrational for SNR to pay the small penalty (relative to the amount of money that it was bidding in the auction) to do so. As shown, the penalty was 0.27% of the total amount of SNR's outlay in the auction. Auction 97 bidders were expressly permitted to withdraw existing provisionally winning bids in no more than two rounds across the entire auction.[76] In such a late stage of the auction, use of that limited resource to consolidate some license territories was much more likely to be successful. Under those circumstances, using the limited withdrawal opportunity likely represented the very efficient allocation of SNR's resources.[77]

[74] Report at ¶ 51.
[75] Northstar, which had the greater eligibility, could consolidate the more expensive New York (BEA010-B1) and Boston (BEA003-B1) metro areas.
[76] *Auction 97 Procedures*, 29 FCC Rcd at 8445-46.
[77] *Amendment of Part 1of the Commission's Rules – Competitive Bidding Procedures, Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rulemaking*, 15 FCC Rcd 15293, 15302 (2000).

Figure 3

Before and after the rounds 238-240 "reconfiguration" of the 3-B1 and 12-B1 licenses



(45) Separately, the Report points to the SNR withdrawal of a provisionally winning bid for a Tampa area license (BEA034-B1) in round 244.[78] According to the Report:

> In round 245, Northstar bid on that license. Later SNR bid on the license again, but Northstar did not bid again, and SNR ultimately won the license. It is unusual in itself that a bidder would withdraw on a license and then later bid on that license again. SNR's initial provisionally winning bid was $21,339,000. Following SNR's withdrawal, Northstar was able to become the provisionally winning bidder for the lower price of $19,385,000. SNR then recaptured the license for $21,445,000.[79]

(46) In fact, the withdrawal of a provisionally winning bid frees up bidding units that can be used to bid on other licenses,[80] which is a particularly strong incentive if an auction features a late stage activity requirement of 100 percent. For example, in Auction 97, the FCC announced several days in advance that it would transition to stage four and a 100 percent activity requirement in round 247.[81] SNR's withdrawal of its provisionally

[78] Report at ¶ 55.
[79] Report at ¶ 55.
[80] Even the Report notes that the withdrawal "may have been motivated by a need for additional bidding eligibility . . . ." Report at ¶ 55.
[81] *https://auctionbidding.fcc.gov/auction/home/announcementDetail.htm?ann_id=1187.*

winning bid for the Tampa license in round 244 freed up 768,000 bidding units, which SNR used to make 27 new bids in round 247. When those new bids were eventually topped, SNR apparently chose to return to bid on the Tampa area license.

F. ON GAPS IN GEOGRAPHIC COVERAGE FOR NORTHSTAR AND SNR

(47) The Report claims that gaps in geographic coverage are consistent with the idea that Northstar and SNR were under DISH's *de facto* control.[82] According to the Report, "the bidding strategies and purchases of Northstar and SNR are not consistent with the coverage goals that one would expect of a firm that intends to construct a mobile wireless system."[83] The Report contends that the licenses each purchased do not provide complete coverage of regional or national geographic areas and do not focus on high-population areas that would be expected to provide a basis for a business plan.[84]

(48) However, the claim that there is no way for either firm on its own to develop a business without full nationwide coverage is at odds with the results of the recent Broadcast Incentive Auction. CC Wireless Investment, LLC (Comcast),[85] United States Cellular Corporation,[86] Channel 51 License Co LLC (Columbia Capital and Raj Singh),[87] Bluewater Wireless II, L.P. (Amos Hostetter, Abrams Capital, Charles Townsend),[88] TStar 600, LLC (Northwood Ventures),[89] NewLevel, LLC (Grain Group),[90] and Omega

[82] Report at ¶ 56 (heading).
[83] Report at ¶ 57.
[84] Report at ¶ 57.
[85] CC Wireless Investment, LLC, Application for New Licenses in the 600 MHz Bands, ULS File No. 0007753826 (filed Apr. 27, 2017); Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses, Public Notice, 32 FCC Rcd 4832 (WTB 2017).
[86] United States Cellular Corp., Application for New Licenses in the 600 MHz Bands, ULS File No. 0007752707 (filed Apr. 26, 2017); Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses, Public Notice, 32 FCC Rcd 4832 (WTB 2017).
[87] Channel 51 License Co., LLC, Application for New Licenses in the 600 MHz Bands, ULS File No. 0007753604 (filed Apr. 27, 2017).
[88] Bluewater Wireless II, L.P., Application for New Licenses in the 600 MHz Bands, ULS File No. 0007754927 (filed Apr. 27, 2017); Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses, Public Notice, DA 18-693 (WTB rel. July 3, 2018).
[89] TStar 600, LLC, Application for New Licenses in the 600 MHz Bands, ULS File No. 0007753119 (filed Apr. 26, 2017); Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses, Public Notice, DA 18-20 (WTB rel. Jan. 9, 2018).
[90] NewLevel, LLC, Application for New Licenses in the 600 MHz Bands, ULS File No. 0007754388 (filed Apr. 27, 2017).

Wireless, LLC (MC Partners)[91] all were winning bidders on groups of licenses that are smaller and/or less contiguous than either the holdings of Northstar and SNR. (See Appendix C.) In the Report's apparent view, each of these firms acted in a manner contrary to their own self-interest and made irrational decisions.

G. ON OBSERVED OUTCOMES AND CHANCE

(49) Returning to the arguments about late-stage paired bidding, the Report next argues that "the observed bids and auction outcomes could not reasonably have happened by chance."[92] According to the Report, the probability is remote that, in the absence of DISH control, Northstar and SNR would bid in the same round for licenses on which there had been no bids for more than 50 rounds.[93] And, once again, the Report attempts to rule out coordination by Northstar and SNR based on the claim that "it makes little sense for Northstar and SNR to coordinate in this way independently of DISH."[94] Earlier, the Report insisted that there could not have been direct coordination by Northstar and SNR on this point "because the paired bids make little sense if Northstar's and SNR's bids were motivated by the goal of having a particular one of them win the license . . . ."[95]

(50) Again, however, this argument is predicated on the faulty claim that every independent business plan involves uniform coverage over a contiguous geographic region. As discussed above, the evidence from the Incentive Auction is that sophisticated bidders can and do purchase license portfolios that either have significant gaps and/or are non-contiguous. And, as noted, allowing the FCC's random assignment mechanism to determine which bidder would be designated the provisionally winning bidder was perfectly rational and profit-maximizing for two independent bidders in their efforts to each acquire licenses in proportion to their initial eligibility for a broader footprint at minimum costs. Further, the resurgence of double bidding after 50 or more rounds of no bids in some markets is in line with their individual incentives when the FCC has implemented a stage transition with greater activity requirements.

(51) The Report clearly attempts to "rule out" direct coordination by Northstar and SNR to support the claim that DISH must have controlled all bidding. But, the apparent, observable bidding tactics of Northstar and SNR would have neither required control by one party nor constituted evidence of control by one party—whether Northstar, SNR, or DISH.

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[91] Omega Wireless, LLC, Application for New Licenses in the 600 MHz Bands, ULS File No. 0007754732 (filed Apr. 27, 2017); *see also* Incentive Auction Task Force and Wireless Telecommunications Bureau Grant 600 MHz Licenses, Public Notice, DA 18-774 (WTB rel. July 26, 2018).
[92] Report at ¶ 60.
[93] Report at ¶ 60.
[94] Report at ¶ 60.
[95] Report at ¶ 44.

IV. POST-AUCTION EVENTS DO NOT SUPPORT THE CONCLUSIONS IN THE REPORT

(52) Finally, the Report argues that "[p]ost-auction events support the conclusion of Northstar and SNR being under the *de facto* control of DISH."[96] The Report notes that after the FCC denied the bidding credits, each of the parties elected to default on certain licenses.[97] According to the Report, "[t]he defaults continue the pattern of promoting the uniformity of coverage provided by the combined holdings of Northstar and SNR at additional cost to the continuity of geographic coverage for each individually."[98]

(53) As shown, however, the evidence from the Incentive Auction indicates that major wireless carriers, potential entrants, and sophisticated financial investors purchased spectrum portfolios with less than uniform coverage in the Incentive Auction.

V. CONCLUSION

(54) The type of bidding behavior employed by Northstar and SNR in Auction 97 neither required control by one party nor constituted evidence of control by a single party, i.e., DISH. Instead, their behavior is consistent with each party individually striving to win as many licenses as possible, at as low a price as possible. That is, the Auction 97 bidding data suggest that each bidder simultaneously wanted the largest possible footprint for the group and the largest possible share of that footprint for itself. The behavior described in the Report is entirely consistent with these objectives. Contrary to the Report's assertions, it is unreasonable to conclude from the Auction 97 bidding data that there must have been a single entity controlling the bidding of Northstar, SNR, and DISH.

I hereby declare, under penalty of perjury, that the foregoing statements in this Reply to the "Preliminary Economic Analysis of the AWS-3 Auction" by Dr. Leslie Marx are true and correct to the best of my knowledge, information, and belief.

Executed October 22, 2018.

/s/ David J. Salant
David J. Salant

/s/ Gary Biglaiser
Gary Biglaiser

[96] Report at ¶ 65 (heading).
[97] Report at ¶ 65.
[98] Report at ¶ 69.

APPENDIX A

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PROFESSIONAL EXPERIENCE

2008 – 2011, 2017-	Senior Managing Director, FTI Consulting
2007 –	Professor Associé/Invité and Associated Researcher Toulouse School of Economics
2006 –	Co-Founder, Auction Technologies, Inc.
2013 – 2015	Managing Director Alvarez and Marsal
2003 –	Adjunct Senior Research Scholar, Columbia Institute for Tele-Information, Columbia University
2004 –	Research Professor, Center for Research in Wireless Communications, Clemson University
2006 – 2008	Senior Consultant, CRA International
2003 – 2004	Co-CEO and Founder, Optimal Markets, Inc.
2000 – 2003	Senior Vice President, NERA
2000	Special Consultant, NERA
1999 – 2002	President and Founder, Alkera Inc d/b/a Optimal Auctions.
1999– 2000	Managing Director, Navigant Consulting Incorporated/LECG, Incorporated
1998–1999	Principal, LECG, Incorporated
1996–1998	Director, LECG, Incorporated

1995–1996	Principal, Charles River Associates Incorporated
1993–1995	Principal Member Technical Staff, GTE Laboratories Incorporated
1991–1993	Research Associate, Department of Economics, Boston University
1987–1993	Senior Member Technical Staff, GTE Laboratories Incorporated
1983–1987	Assistant Professor, Department of Economics, VPI
1979–1983	Assistant Professor, Department of Economics, SUNY at Buffalo

EDUCATION

Ph.D., (Economics) University of Rochester, February, 1981.

M.A., (Economics) University of Rochester, May, 1978.

A.B., (Economics and Mathematics) Washington University, Magna Cum Laude, May, 1975.

PUBLICATIONS

Book

"A Primer on Auction Design, Management and Strategy," MIT Press (2014).

Refereed Publications

"Resale Price Maintenance Post Leegin: A Model of RPM Incentives, (with William Comanor), *Review of Industrial Organization* Vol. 50, No. 2 (March 2017): 169-79.

"Evolving Technologies and Standards Regulation," with Luis Cabral, *International Journal of Industrial Organization,* Vol. 36 (September, 2014):48-56.

"Abuse of Dominance and Licensing of Intellectual Property," with Patrick Rey, *International Journal of Industrial Organization*, Vol. 30, No. 6 (November, 2012): 518-27.

Book review of "An Introduction to the Structural Econometrics of Auction Data," by Harry J. Paarsch, Han Hong and with M. Ryan Haley." *European Review of Agricultural Economics* Vol. 36, No. 3 (2009):462-465.

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"Adoptions and Orphans in the Early Microcomputer Market." With Neil Gandal and Shane Greenstein. *Journal of Industrial Economics,* Vol. 47, No. 1, (March, 1999):87-105.

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"Toward the Best Bet." With Phillip McLeod, *Electric Perspectives,* Vol. 23, No. 5, (September-October 1998): 74-83.

"Up in the Air: GTE's Experience in The MTA Auction for PCS Licenses." *Journal of Economics and Management Strategy,* Vol. 6, No. 3 (Fall, 1997): 549-72.

"Behind the Revolving Door: A New View of Public Utility Regulation." *RAND Journal of Economics* Vol. 26, No.3, (Autumn 1995): 362–77.

"Hollygopoly: Oligopolistic Competition for Hollywood Movies." With Neil Gandal. *The Antitrust Bulletin* Vol XL, No. 3, (Fall 1995): 699–712.

"Preemptive Adoptions of an Emerging Technology." With Michael Riordan. *Journal of Industrial Economics* Vol. 42, No. 3, (September 1994): 247-61.

"Trigger Price Regulation." With Glenn Woroch. *RAND Journal of Economics* 23, No. 1 (Spring 1992): 29–51.

"A Repeated Game with Finitely Lived Overlapping Generations of Players." *Games and Economic Behavior* 3 (May 1991): 244-59.

"Crossing Depuit's Bridge Again: A Trigger Policy for Efficient Investment in Infrastructure." With Glenn Woroch. *Contemporary Policy Issues* 9 (April 1991): 101–14.

"Time Consistency and Subgame Perfect Equilibria in a Monetary Policy Game." With Douglas McTaggart. *Journal of Macroeconomics* 11, No. 4 (Fall 1989): 575–88.

"Equilibrium in a Spatial Model of Imperfect Competition with Sequential Choice of Locations and Quantities." *Canadian Journal of Economics* 21, No. 4 (November 1986): 575–88.

"On the Consistency of Consistent Conjectures." *Economics Letters* 16 (1984): 151–57.
"Existence of Vote Maximizing Equilibrium in One Dimension." *Mathematical Social Sciences* 5 (August 1983): 73–87.

Other Publications

"Policy toward Standardization in Wireless Telecommunications." with Luis Cabral, in *The Economics of Digital Markets,"* edited by Gary Madden and Russel Cooper, Edward Elgar Publishers, 2009.

"Multi-Lot Auctions: Applications to Regulatory Restructuring." In *Obtaining the Best from Regulation and Competition*, edited by M.A. Crew and S. Spiegel. Boston, MA: Kluwer Academic Publishers (2004).

"Auctions of Last Resort in Telecommunications and Energy Regulatory Restructuring." Chapter 7 in Michael Crew (ed.) in *Market Pricing and Deregulation of Utilities,* Kluwer Academic Publishers (2002).

"Promoting Capital Improvements by Public Utilities: A Supergame Approach." With Glenn Woroch. Chapter 14 in W. Neuefeind and R. Riezman (eds.), *Economic Theory and International Trade: Essays in Memoriam of John Trout Rader III*. Springer Verlag, 1992.

"A New Look at Public Utility Regulation Through a Revolving Door." Chapter 9 in Michael Crew (ed.), *Economic Innovations in Public Utility Regulation*. Kluwer Academic Publishers, 1992.

"Price Setting in Professional Team Sports." Chapter 5 in Paul M. Sommers (ed.), *Diamonds Are Forever: The Business of Baseball*. The Brookings Institution, 1992.

OTHER PAPERS

"Auctions for Essential Inputs," with Patrick Rey, 2016.

"A multi-regional model of electric resource adequacy," (with Claude Crampes) TSE Working Papers 18-877,

"The Effects of Standard Setting Organization Policy on Investment and Welfare," with Paul Seabright, 2014.

"Auction Design for Capacity Markets," with Robert Stoddard, June, 2008.

"Sequential Auctions and Auction Revenue," (with Luis Cabral) 2016.

PATENTS

"Electronic withdrawal and/or exit price requests for computer-based auctioning of basic generation services." U.S. Patent 9,940,666, April 10, 2018.

"Electronic withdrawal and/or bid switch requests for computer-based auctioning of basic generation services." U.S. Patent No. 9,886,719. February 6, 2018.

"Electronic extension requests to extend electronic bidding for qualified bidders for computer-based auctioning of basic generation services." U.S. Patent 9,811,855, November 7, 2017.

"Electronic bid switch requests for computer-based auctioning of basic generation services." U.S. Patent 9,792,647, October 17, 2017.

"System and method for multi-product clock auctions" (with Paul Milgrom), US Patent No. 8577746 B1, November 5, 2013

"Method and System for Computer-Based Auctioning of Basic Generation Services," US Patent No. 7,409,360, August 5, 2008.

"Method and System for Computer-Based Auctioning of Basic Generation Services," US Patent No. 8,195,523, June 5, 2012.

"Method and System for Computer-Based Auctioning of Basic Generation Services," US Patent No. 8,219,458 July 10, 2012.

"Method and System for Computer-Based Auctioning of Basic Generation Services," US Patent No. 8,219,459 July 10, 2012.

"Method and System for Computer-Based Auctioning of Basic Generation Services," US Patent No. 8,285,601 October 9, 2012.

EDITORIAL AND REFEREE ACTIVITY

Dr. Salant is the guest editor of two special issues of the *Journal of Regulatory Economics* on Auctions and Regulation. In addition, Dr. Salant has served as a referee for *American Economic Review, Canadian Journal of Economics, Contemporary Policy Issues. Econometrica, Economic Inquiry, The Economic Journal, Games and Economic Behavior, IEEE/ACM Transactions on Networking, International Economic Review, Journal of Political Economy, Journal of Economics and Management Strategy, Journal of Regulatory Economics, Journal of Macroeconomics,* National Science Foundation, and the *RAND Journal of Economics*

CONFERENCES

Organized Conferences on

"Spectrum Auction Design, Experience and Post-Auction Market Structure," Columbia University, CITI, June 2014.

"Smart Radio," Center for Tele Information, Columbia University, joint with Clemson Center for Research in Wireless Communications and Virginia Tech's College of Engineering, http://www4.gsb.columbia.edu/citi/events/eventsarchive/smartradio.

"Wireless Communications and Universal Service," Center for Tele Information, Columbia University, 2005, http://www4.gsb.columbia.edu/citi/events/eventsarchive/wirelessuniversal200.

"After the Closing of the Spectrum Frontier: What Spectrum Models Work Best and When," Center for Tele Information, Columbia University, 2004, http://www4.gsb.columbia.edu/citi/events/eventsarchive/spectrumfrontier.

HONORS, SCHOLARSHIPS, AND FELLOWSHIPS

Phi Beta Kappa, 1975
Rush Rhees Fellowship, 1975–1978
University Fellowship, 1975–1979

COURSES TAUGHT

Auction Theory and Practice (graduate)
Microeconomics (graduate and undergraduate)
Industrial Organization (graduate and undergraduate)

Managerial Economics (graduate and undergraduate)
Regulatory Economics
Game Theory
Public Finance (graduate and undergraduate)
Economics of Sports
Principles of Economics

CONSULTING EXPERIENCE

TESTIMONY

At Montana Public Service Commission on behalf of Northwestern Energy on default service procurement auction (2006).

At Illinois Commerce Commission on default service procurement auctions, Docket Numbers 05-0159, 05-0160, 05-0161 and 05-0162, (Spring and Summer 2005).

At Public Utility Commission of Texas, on capacity entitlements auctions, Project Number 24492 (2001).

At New Jersey Board of Public Utilities, on auction design for Basic Generation Services, Docket Number EX 01110754 (2000).

Hearing of the International Competition Policy Advisory Committee on 3G standard setting procedures and competition policy, June 1999.

On behalf of the FCC in Nextwave Personal Communications Inc v. Federal Communications Commission, May, 1999

On behalf of PanCanadian at Alberta Energy Utilities Board (January, 1996) on pipeline cost allocation principles.

TELECOMMUNICATIONS:

- Spectrum Auction Bidder Support (mostly lead adviser)

  (2018) CAF-2 US (confidential)

  (2016 -) KPN (Netherlands)

  (2017 -) Sunrise (Switzerland)*

  (2015 - 17) US Incentive Auctions *

(2015)	German multi-band, Canada AWS
(2014)	Canada 700 MHz, US AWS (#97)*, Poland
(2013)	Austria (multi-band)*, Canada, Slovakia, US
(2012)	Netherlands&*, Belgium, Swiss 4G, France 4G auctions
(2011)	Spain 4G, Italy 4G*, Portugal 4G, Belgium 4G, Greece 4G
(2010)	German 4G*, Mexican AWS/PCS*, Indian 3G*, Mexico 3G
(2008)	US 700 (#73), Canadian AWS, Italian WiMax
(2006)	US AWS -1 (#66) *
(2005)	US PCS (#58) *
(2003)	US 700 (#49)
(2002)	Taiwan 3G
(2001)	US PCS (#35)*, Australian 3G*, Austrian 3G, Danish 3G, Dutch 3G
(2000)	US 39 GHz (#30), Australian PCS*, UK 3G*, German 3G*
(1999)	US PCS (#22)*, Canadian 24 and 38 GHz*
(1998)	Dutch 2G, Telebras privatization, Mexico PCS
(1997)	Brazil B block cellular
(1996)	US PCS (#5), US MDS (#6), US SMR (#7)
(1994-5)	US PCS (#4)*

Regulation and Wireless

Development of wireless industry simulation modeling team at Math Science Research Center at Bell Labs (2000–2001).

Advised Leap Wireless on the ATT and T-Mobile proposed merger (2010).

Advised E-Plus on wholesale roaming regulation (2009 – 2010).

Advised QUALCOMM on European 3G standard setting, including numerous filings and testimony (1999 – 2001)

Advised QUALCOMM on competition policy issues related to European competition policy matters (2005 – 2007)

Led team in developing GTE's Universal Service auction proposal (1995–6)

Project leader for wireless cost simulation model for GTE Labs (1989 – 93)

Advised Leap Wireless on wholesale roaming, prepared testimony (2005)

Advised SouthernLinc Wireless on wholesale roaming (2005)

Advising Canadian operator on wholesale roaming (2009)

Advised Indian operator on spectrum requirements for 3G (2008)

Advised Peru's OSIPTEL on rural service procurement auctions (1995)

- Spectrum Allocation and Auction Design

Advised Pakistan PTA on 3G auction (2013–4)

Advised Hungarian NMHH on auction design options (2012)

Advised satellite television operator on design of auction for television ads (2011)

Advised Telecommunications Regulatory Authority of India (2004).

Advised Industry Canada on 2300 MHz/3500 MHz auction (2003–4)

Advised UK Radiocommunications Agency on spectrum trading (2002)

Advised Netherlands DGTP on design of auction for sale of AM and FM frequency rights (2001–2)

Advised Italian Ministry of Communication in design of 3G spectrum auction (2000)

Advised on design of auction for ads in telephone directories (1999)

Advised Industry Canada on spectrum auctions for LMCS frequencies (1996) and 24/38 GHz frequencies (1999)

Designed and implemented first spectrum auction for paging licenses for the Mexican Ministry of Communications (SCT), November 1996

Designed and implemented first spectrum auction for trunk radio frequencies for the Guatemalan Superintendent of Telecommunications, May 1997

FCC experimental testing of combinatorial auction mechanisms (2000)

Advised IDA Singapore on 3G auctions (2001)
Advised IDA Singapore on wireless local loop auctions (2001)

Advised Australian ACA on 3G auctions (2000)

Advised Australian SMA on design of 500 MHz license spectrum auction (1996)

Led team that developed auction software adopted by Industry Canada (1995), the Mexican Ministry of Communications and Transport (1995) and the Guatemalan Superintendent of Telecommunications (1996 – 7).

Advised Colombia (Ministry of Communications) in draft auction legislation for spectrum auctions (1999).

Advised Peru (OSIPTEL) on spectrum allocations for universal service (1995).

ENERGY AND CHEMICALS:

Carbon credits auction design – North America (2016)

Advised on Energy Procurement, Southern California Edison (2009 – 10)

Advised First Energy Solutions on Bidding Strategy (2009)

Advised California Forward Capacity Markets Association on California Capacity Markets (2007).

Served as Auction Manager for Northwestern Energy default service procurement auction (2006). Testified at Montana Public Service Commission.

Advised NYSERDA on auction design and bidding procedures for NYSERDA Renewable Electricity Credit Procurement (2006).

Served as Auction Monitor for Illinois Commerce Commission (2005 - 6). Testified at Illinois Commerce Commission (2006).

Developed design and implementation plan for Empire Connection transmission rights auction (2003)

Developed and managed auction for Williams for selling ethylene (2003)

Developed auction design adopted by OMV for natural gas release program (2003)

Advised Acquirente Unico (Italy) on default service options (2002–3)

Advised Texas Utilities on energy entitlement auctions, and testified at PUCT (2001–2)

Developed Standard Offer Service procurement auction design for New Jersey Utilities (2000–2).

Advised Netherlands DTe on transmission rights auctions (2000)

Advised EPCOR on bidding strategy in Alberta PPA auction (2000)

Advised EPCOR on bidding strategy in Alberta Balancing Pool auction (2000)

Advised on bidding 3rd round PEDEVESA auction of oil lease rights in Venezuela (1996)

APPENDIX B

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UNIVERSITY EDUCATION

B.S. Economics, University of Arizona, 1982
M.S. Economics, University of California, San Diego, 1985
Ph.D. Economics, University of California, San Diego, 1988

EMPLOYMENT and EXTENDED STAYS

July 1999- present	Professor, Department of Economics, University of North Carolina, Chapel Hill
Feb 2010-July 2010	Visiting Professor, Toulouse School of Economics
May-July 2007	Visiting Scholar, Portuguese Competition Authority
May-July 2006	Visiting Scholar, Portuguese Competition Authority
January- July 2003	Visiting Professor, University of Toulouse
July -June 1998	Assistant Chief Economist, Federal Communications Commission
June 1997	Visiting Professor, Universitat Autonoma de Barcelona
July 1994-June 1998	Associate Professor, Department of Economics, University of North Carolina, Chapel Hill
January-July 1996	Visiting Associate Professor, Department of Economics, UCLA
July 1994-May 1995	Visiting Associate Professor, Department of Economics, Indiana University

July 1988-July 1994 Assistant Professor, Department of Economics, University of North Carolina, Chapel Hill

January-July 1991 Visiting Assistant Professor, Department of Economics, Boston University

PROFESSIONAL SERVICE

Associate Editor, *RAND Journal of Economics* 2004 to the present
Coeditor, *Journal of Economics and Management Strategy* 1995-1998 and 2001-2008.
Associate Editor, *Journal of Industrial Economics* 2002-2008.
Editorial board, *Journal of Regulatory Economics* 2002-2007.
Editorial board, *Berkeley Electronic Journals in Economics Analysis and Policy* 2002-2010.
Editor, of Special Issue in honor of James Friedman for the *International Journal of Economic Theory* May 2011.
Program Committee, Summer Meetings of the *Econometrica* (Europe) Society 2006-2008.
Scientific Committee, for EARIE 2010-2017.
Scientific Committee, for ANACOM 2011-2015.

RESEARCH FIELDS

Microeconomic Theory
Industrial Organization
Regulation and Antitrust

TEACHING FIELDS

Microeconomic Theory - undergraduate and graduate
Information Economics and Game Theory - undergraduate and graduate
Industrial Organization and Regulation - undergraduate and graduate

REFEREED PAPERS

"Risk Sharing with Competition" (1992), *Games and Economic Behavior*, 4, 37-57.

"Middlemen as Experts" (1993), *The RAND Journal of Economics*, 24, 212-223.

"Pollution, Public Disclosure and Firm Behavior" (1993), with John Horowitz, *The Journal of Regulatory Economics,* 5, 303-315.

"Principals Competing for an Agent in the Presence of Adverse Selection and Moral Hazard" (1993), with Claudio Mezzetti, *Journal of Economic Theory*, 61, 309-330.

"Middlemen as Guarantors of Quality" (1994), with James W. Friedman, *The International Journal of Industrial Organization*, 12, 509-531.

"Regulating a Dominant Firm with Unknown Demand" (1995), with Ching-to Albert Ma, *The RAND Journal of Economics*, 26, 1-19.

"Dynamic Pollution Regulation and Incentives for Investment in Pollution-Reducing Technologies" (1995), with John Horowitz and John Quiggin*, Journal of Regulatory Economics*, 8, 33-44.

"Pollution Regulation, Incentives for Pollution-Control Research" (1995), with John Horowitz, *The Journal of Economics and Management Strategy*, 4, 663-684.

"Politician's Decision Making with Re-election Concerns" (1997), with Claudio Mezzetti, *Journal of Public Economics*, 66, 425-447.

.

"Adverse Selection with Competitive Inspection" (1999), with James Friedman, The *Journal of Economics and Management Strategy*, 8, 1-32.

"Investment Incentives and a Regulated Dominant Firm" (1999), with Ching-to Albert Ma. *Journal of Regulatory Economics*, 16, 215-235.

"Incentive Auctions with Information Revelation" (2000), with Claudio Mezzetti, *RAND Journal of Economics*, 31, 145-164.

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"Switching Costs and Network Effects in Competition Policy" with Jacques Cremer, in CRESSE volume.

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"Migration Between Networks" with Jacques Cremer and Andre Veiga.

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"Marquee Products for Platforms with Exclusive Offers" with Ozlem Bedre-Defoli.

"Incumbency on Patforms" with Emilio Calvano and Jacques Cremer.

"Durable Goods Monopoly with Quality Improvements: Pricing" with James Anton.

"Regulator's Hyperactivity" with Bruno Jullien.

"The Economics of Shelf Space" with Martin Perry.

"Quality, Public Goods, Private Markets and Auctions" with Jean-Charles Rochet.

"Merchants vs. TSPs: Competing Intermediary Models" with Andrei Hagiu.

"Adverse Selection with Network Competition" with Albert Ma.

"Long-term Contracts in Markets with Network Effects" with Bruno Jullien.

BOOK REVIEWS

Market Microstructure:Intermediaries and the Theory of the Firm by Daniel F. Spulber in Journal of Economics/Zeitschrift Fur Nationalokonomie.

FORMER AND CURRENT THESIS ADVISEES

Basak Altan

Suzzette Baker

Omur Celmanbet

Dan Davis

Sam Flanders

David Fragoso Gonzalez

Fatma Gunay

Matt Horne

Wonchul Hwang

Daniela Ieceanau

Joon-Suk Lee

Yiyi Liu

Meloti Nungsari

Jeremy Petranka

Sarah Riley

Aisling Winston

Panit Wattanakoon

I have been on approximately 70 dissertation or master committees.

CONSULTING

Ameren Utilities –Energy Auctions

American Cable Association – Antitrust

British Telecomm- Antitrust

ComEd - Energy Auctions

T-Mobile – Spectrum Auctions

Singapore Government

New Jersey PJM- Energy Auctions

TXU Energy- Energy Auctions

Dutch Government- Spectrum Auctions

Qualcomm- Spectrum Auctions

Leap Wireless- Spectrum Auctions

Industry Canada- Energy Auctions

Legal Services Commission (UK)

H3G- Spectrum Auctions

Optimus - Spectrum Auctions

Telus- Spectrum Auctions

Northstar - Spectrum Auctions

CONFERENCE PRESENTATIONS

"Bargaining, Middlemen and the Lemon's Problem"
Southeastern Economic Theory Meetings, 1989.

Discussant at the Summer Meetings of the Econometric Society, 1989.

"Risk Sharing with Competition"
Midwest Mathematical Economics Meetings, 1990.

"Middlemen as Experts"
Southeastern Economic Theory Meetings, 1990.
Winter Meetings of the Econometric Society, 1990.
Midwest Mathematical Economics Meetings, 1991.

"Middlemen as Guarantors of Quality"
Southeastern Economic Theory Meetings, 1991.
Winter Meetings of the Econometric Society, 1991.

Discussant at the Winter Meetings of the Econometric Society, 1991.

"Principals Competing for an Agent in the Presence of Moral Hazard and Adverse Selection"
Summer Meetings of the Econometric Society, 1992.

"Regulating a Dominant Firm: Quality, Industrial Structure, and Information Revelation"
Southeastern Theory Meetings, 1993.
Winter Meetings of the Econometric Society, 1993.

"Pollution Regulation, Innovation, Licensing, and R&D by Firms"
Winter Meetings of the Econometric Society, 1993.

Discussant at the Winter Meetings of the Econometric Society, 1993.

"Competition for Business Among Jurisdictions and Re-election Concerns"
Southeastern Economic Theory Meetings, 1994

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"Incentive Auctions and Information Revelation"
Southeastern Economic Theory Meetings, 1995.
Econometric Society Summer Meeting, 1999.

"Investment Incentives and a Regulated Dominant Firm"
Southern Economic Association Meeting, 1996.

"Dynamic Price Regulation"
Regulation Meetings, Barcelona, 1998.
ESSET Meetings, Switzerland, 1998
Southeast Economic Theory Meetings, 1998.
Midwest Economic Theory Meetings, 1998.
2000 Taipei International Conference on Industrial Organization

"Price and Quality Competition under Adverse Selection: Market Organization and Efficiency"
Southeast Economic Theory Meetings, 1999.
2002 Hong Kong Health Conference

"Downstream Integration by a Bottleneck Input Supplier whose Regulated Wholesale Prices are Above Costs"
13th Annual Western Regulation Conference
Southeast Theory Economic Meetings, 2000.

"Moonlighting"
Health Economics Conference, Barcelona, 2003

"Dynamic Price Competition with Capacity Constraints and Strategic Buyers"
Northwestern Industrial Organization Conference, 2003.
Econometric Society Winter Meetings, 2004 San Diego.
Switching Cost Meeting, Helsinki, 2004

"Quality, Upgrades, and Equilibrium in a Dynamic Monopoly Market"
4th Biennial Conference on the Software and Internet Industries, Toulouse, 2007
2nd Annual Industrial Organization Conference, Chile, 2009

"The Value of Switching costs"
CEPR Applied Micro Conference, Israel, 2011
ANACOM Telecommunication Conference, Portugal, 2012

"The Value of Incumbency in Heterogeneous Networks"
Dynamic Industrial Organization Conference, Paris 2012.
ICT Conference, Mannheim, 2013.

"Migration Between Networks"
2nd Annual Asia-Pacific Industrial Organization Conference, 2017

"Middlemen as Information Intermediaries: Evidence from the Used Car Markets"
Madison Search Conference, 2017
3rd Economics of Platforms Workshop

RESEARCH GRANTS

University of North Carolina Junior Faculty Development Grant.

Industry Studies Program Travel Grants, Boston University, 1992 and 1993.

VA research grant.

Microsoft Grants

REFEREE FOR JOURNALS

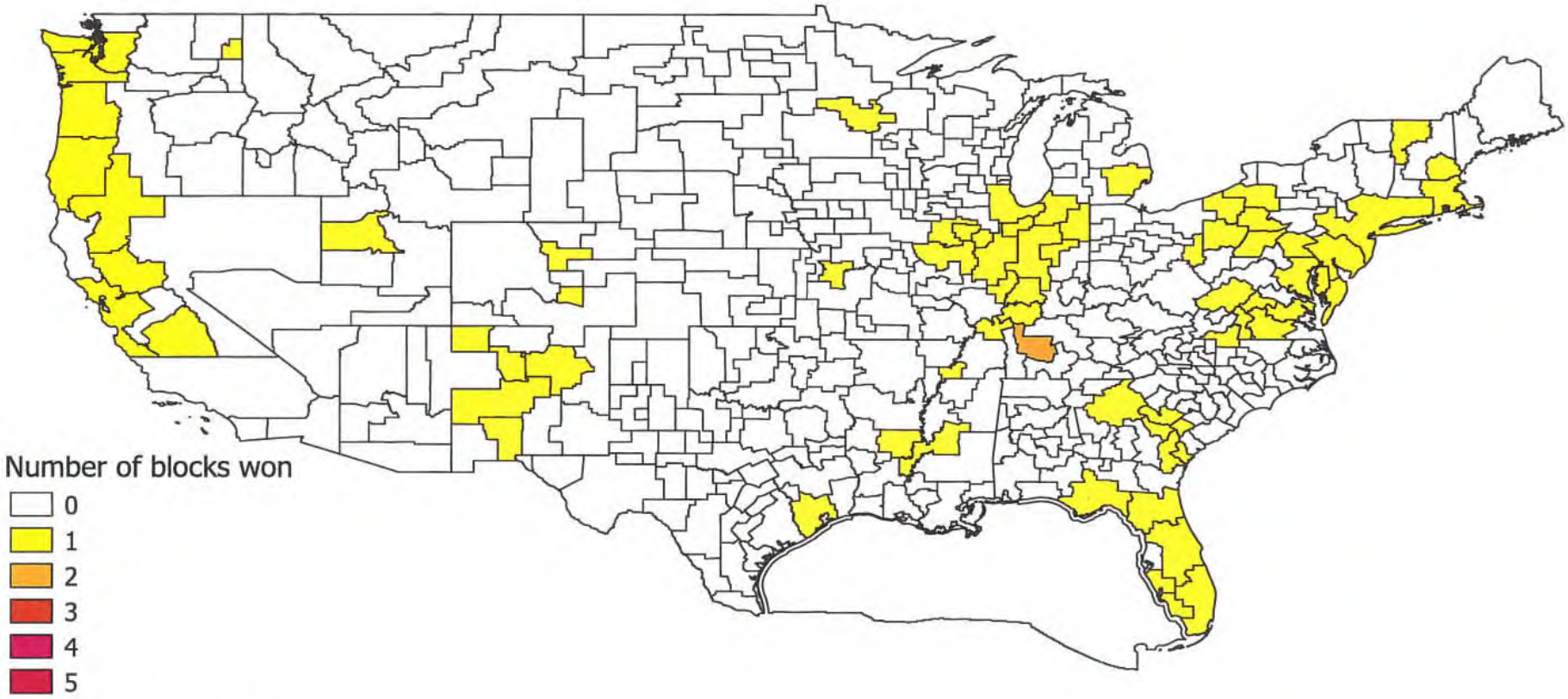
American Economic Review, Econometrica, Economic Inquiry, Economic Theory, Journal of Economics/Zeitschrift Fur Nationalokonomie, Games and Economic Behavior, European

Economic Review, International Economic Review, International Journal of Industrial Organization, Journal of Economic Literature, Journal of Economic Behavior and Organization, Journal of Economic Theory, Journal of Economics and Management Strategy, Journal of Economic Surveys, Journal of Environmental Economics and Management, Journal of Law Economics and Organization, Journal of Political Economy, Journal of Public Economics, National Science Foundation, RAND Journal of Economics, Review of Economic Design, Review of Economic Studies, Southern Economic Journal, Scandinavian Journal of Economics Berkeley Electronic Journals in Economic Analysis and Policy.

APPENDIX C

Broadcast Incentive Auction Winnings

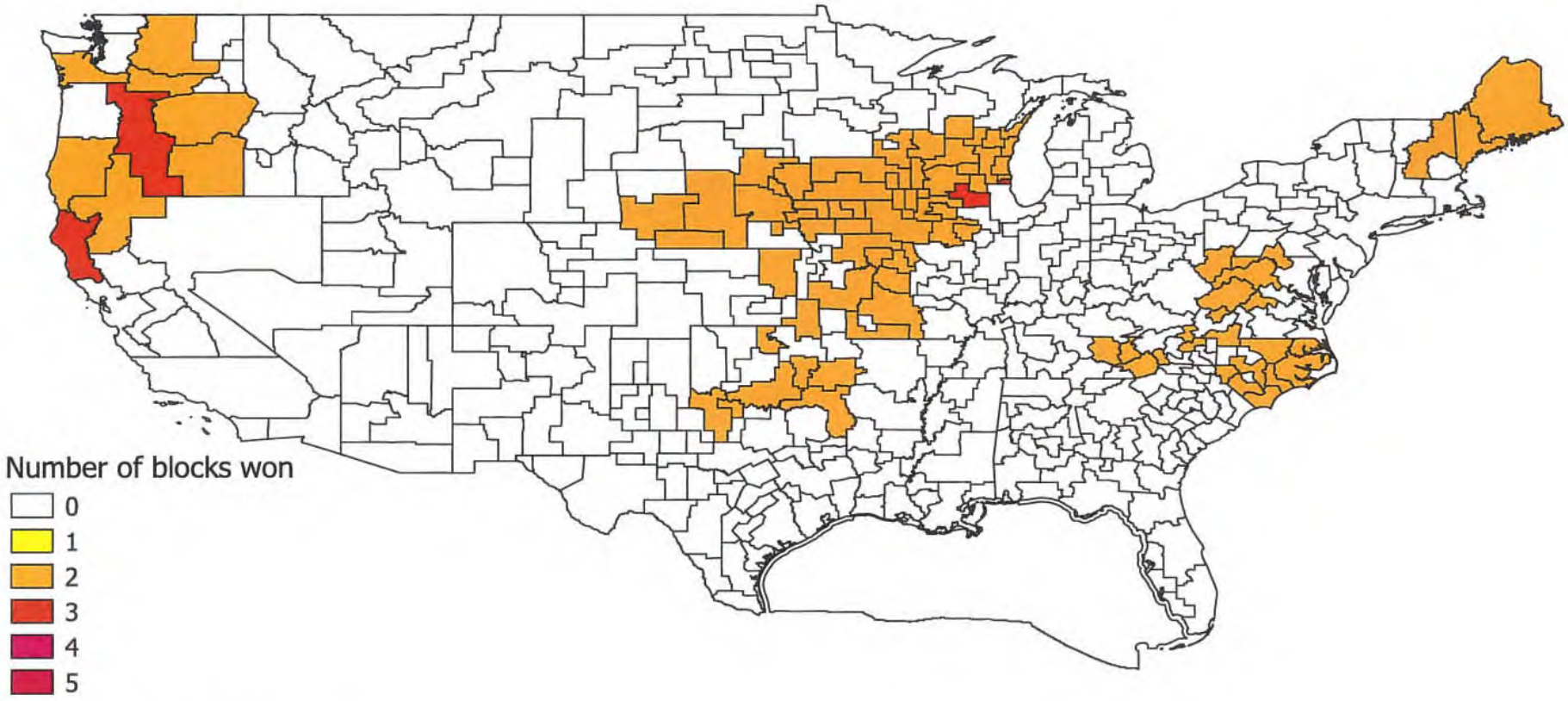
CC Wireless Investment, LLC



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

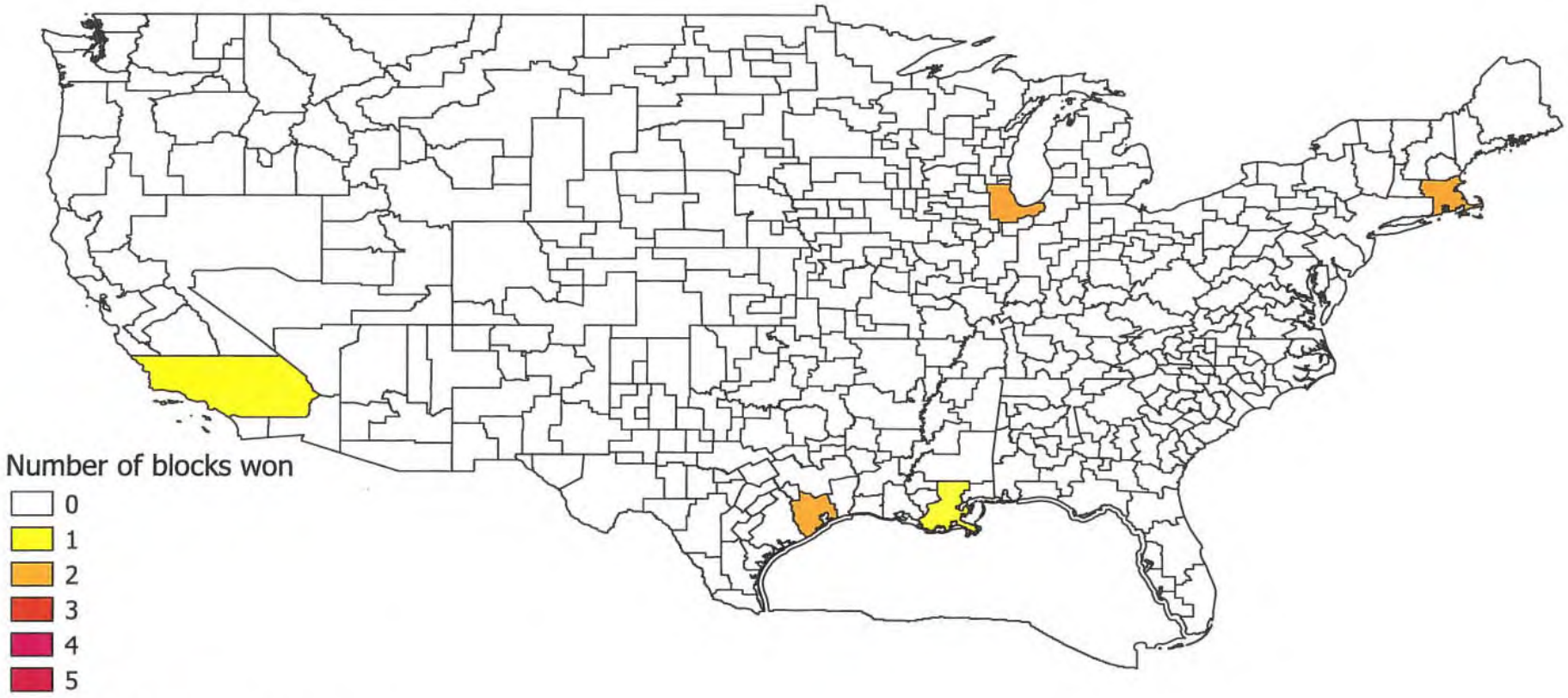
United States Cellular Corporation



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

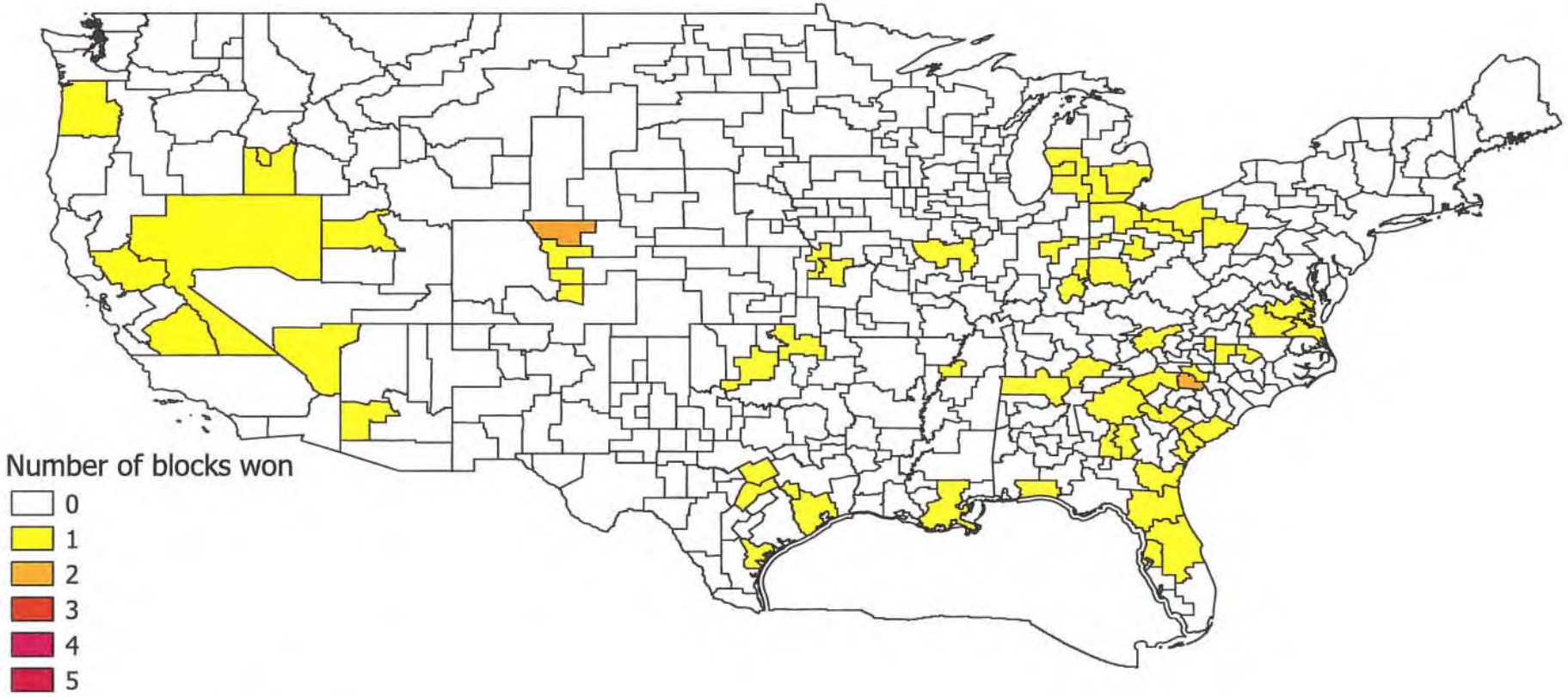
Channel 51 License Co LLC



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

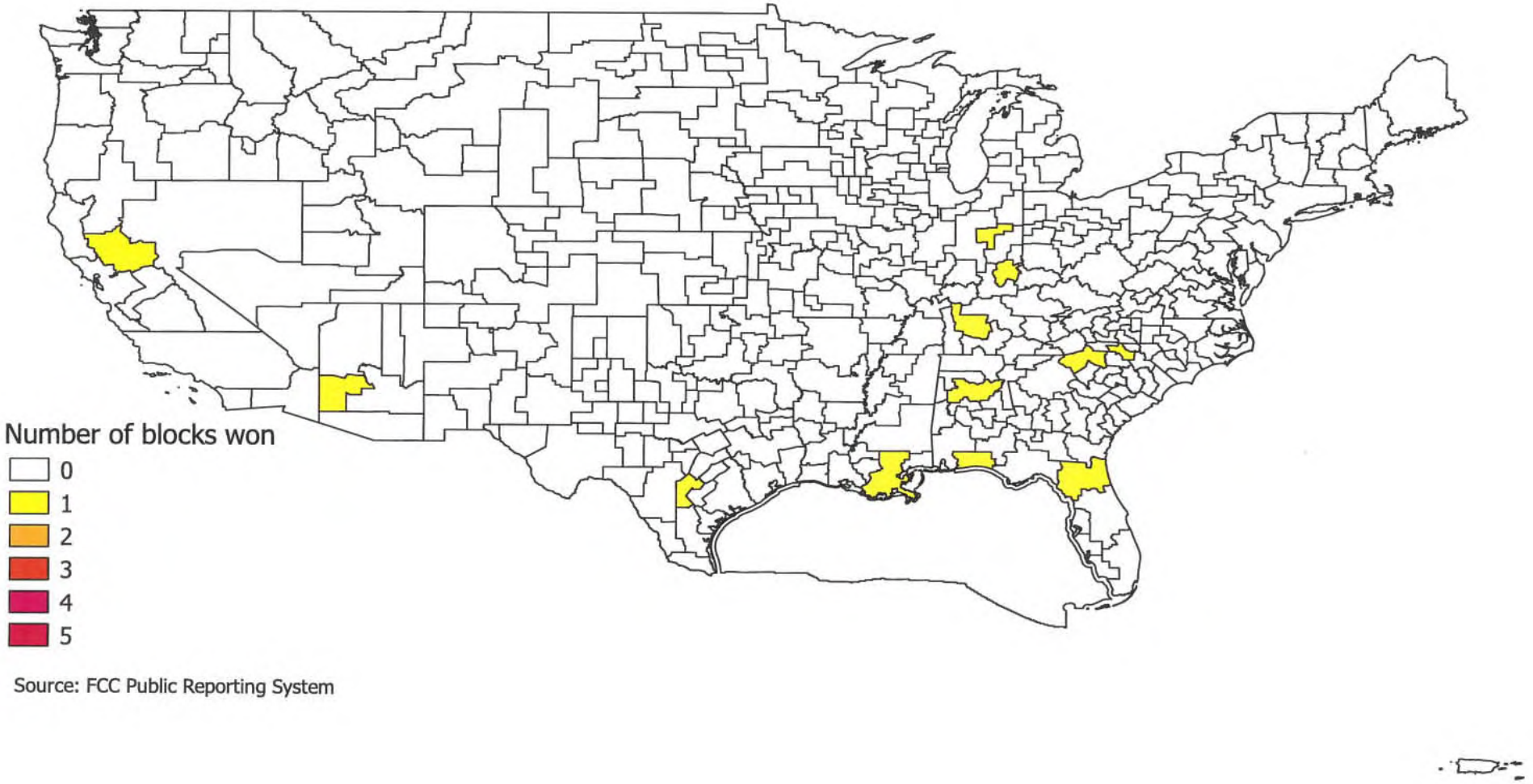
Bluewater Wireless II, L.P.



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

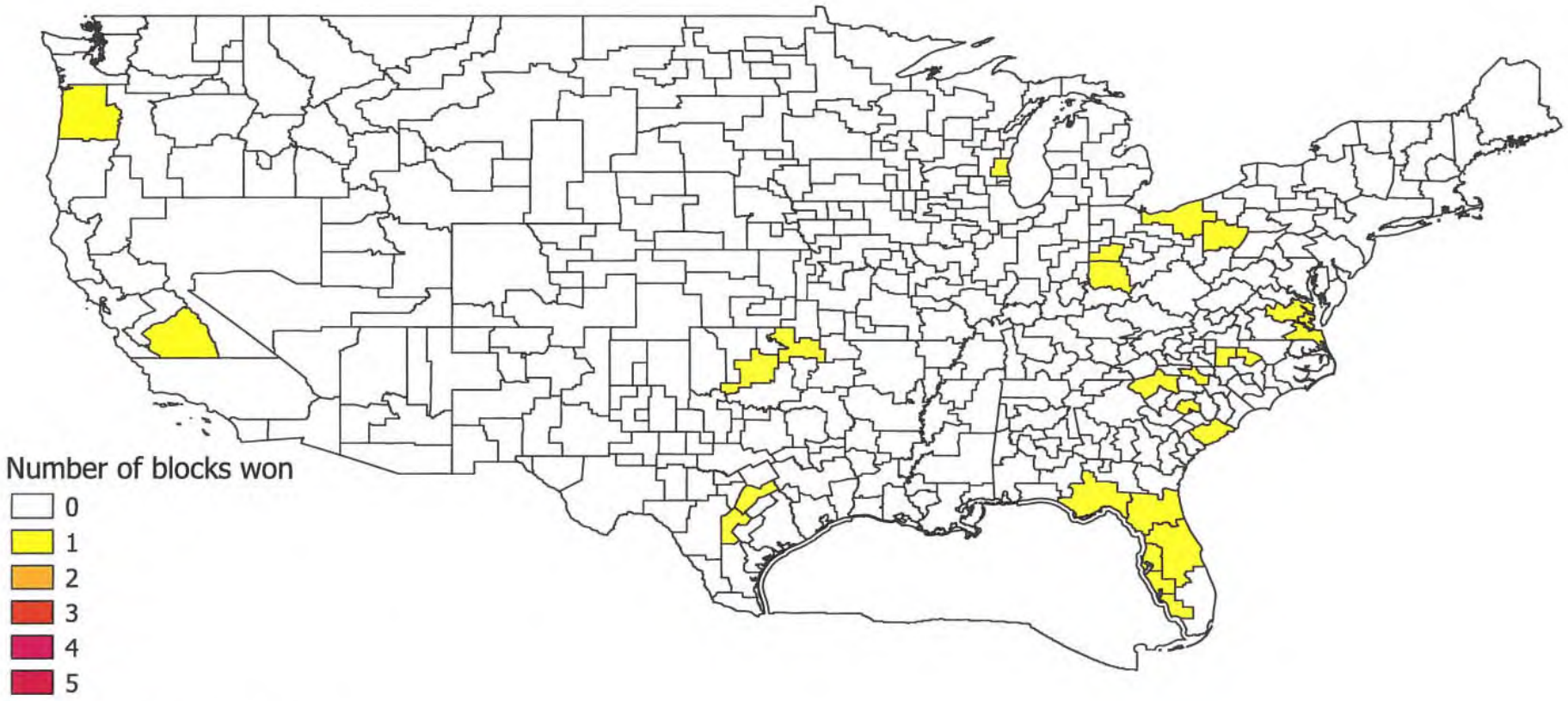
TStar 600, LLC



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

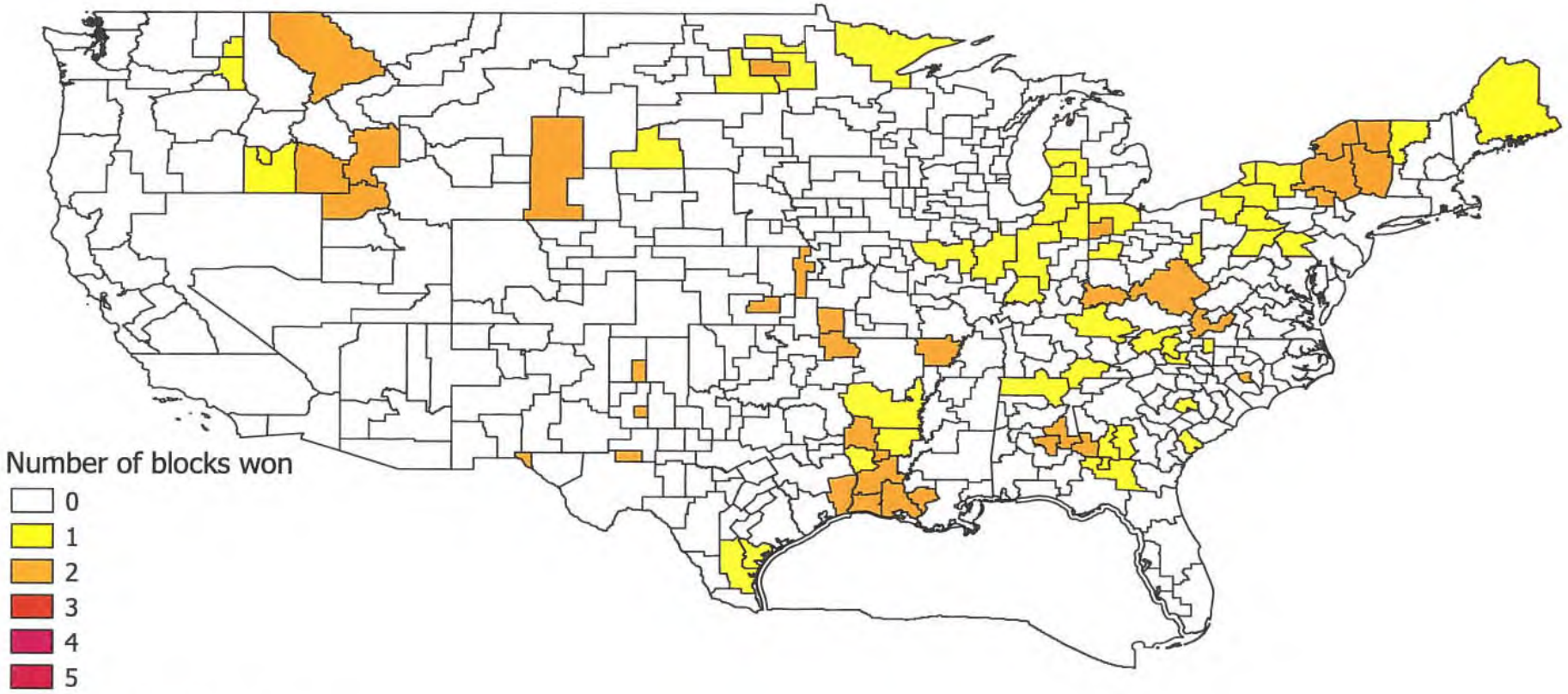
NewLevel, LLC



Source: FCC Public Reporting System

Broadcast Incentive Auction Winnings

Omega Wireless, LLC



Source: FCC Public Reporting System

Exhibit B – Declaration of Carlyn R. Taylor

Declaration of Carlyn R. Taylor

1) I am a Senior Managing Director in the Corporate Finance ("CF") division of FTI Consulting, Inc. ("FTI"), a publicly traded financial and economic consulting firm with over 4,000 professionals. I am the global co-leader of CF, a group of over 900 professionals. Prior to assuming the leadership position in CF, I was the founder and global leader of the Telecom, Media & Technology industry practice within FTI. I have served on FTI's Executive Committee, which manages the entire firm, since 2011, originally as the Industry Initiative leader for FTI and then as the global co-leader of Corporate Finance & Restructuring. I received M.A. and B.S. degrees in Economics from the University of Southern California, where I graduated as the University Valedictorian. I am a Certified Public Accountant with an Accredited Business Valuation certification from the AICPA. I am also a licensed investment banker with Series 7, 24, 63, and 79 licenses from FINRA (successor of the NASD), and I serve as Chairperson of FTI Capital Advisors, an investment banking subsidiary of FTI Consulting. I have worked on hundreds of engagements involving a broad range of telecom companies, including wireless providers, competitive local exchange carriers, local and long distance service providers, broadband and Internet connectivity providers, data centers, telecom equipment manufacturers, undersea cable providers, terrestrial fiber solutions providers, and satellite communications companies. My work often involves strategy and business plan development, business restructuring consulting, corporate finance, due diligence, M&A advisory, and valuation. I began working with cellular companies in 1993 and have worked on dozens of major engagements involving wireless companies and spectrum, including work for AT&T's wireless operations, Sprint, T-Mobile, US Cellular, Leap Wireless, several Sprint affiliates, and virtually all of the regional wireless companies in the U.S. who have now been acquired.

2) I have been engaged to assess whether SNR Wireless LicenseCo, LLC ("SNR") and Northstar Wireless, LLC ("Northstar") have viable business options regarding the use of their respective FCC licenses and whether the managing members of the companies could realize equity returns potentially greater than the returns that could be realized through the exercise of their respective contractual put rights to sell the companies to DISH Network Corporation ("DISH").

3) I have reviewed the respective portfolios of the Federal Communications Commission ("FCC") licenses held by SNR (244 AWS-3 licenses covering approximately 240 million people) and Northstar (261 AWS-3 licenses covering approximately 286 million people),[1] as well as those FCC licenses on which they each selectively

[1] *See* Application of SNR Wireless LicenseCo, LLC, ULS File No. 0006670667 (filed Feb. 13, 2015); Application of Northstar Wireless, LLC, ULS File No. 0006670613 (filed Feb. 13, 2015); *see also* Application of SNR Wireless LicenseCo, LLC, ULS File No. 0008243669 (filed Jun. 8, 2018); Application of Northstar Wireless, LLC, ULS File No. 0008243409 (filed Jun. 8, 2018).

defaulted (for SNR, 113 AWS-3 licenses covering approximately 55 million people; and for Northstar, 84 AWS-3 licenses covering approximately 76 million people).[2]

4) I have examined from publicly available sources, including materials submitted to the FCC in the SNR and Northstar FCC application proceedings[3] and SEC filings, publicly available financial information about SNR and Northstar, including the debt and capital structure of each entity and the investor rights of DISH and other passive investors.

5) In light of these facts, and as discussed in more detail below, it is my professional opinion, based on my many years of experience in both the wireless industry and the wider telecom and media industries, that SNR and Northstar each have viable potential business options regarding the use of their respective FCC licenses. Under those business options, the respective equity returns to the managing members of SNR and Northstar could potentially be greater than the returns that could be realized by exercising their respective contractual put rights. Accordingly, it cannot be said that the capital structures of SNR and Northstar are structured to financially compel the managing members of SNR and Northstar to exercise their respective put rights.

6) As a starting point, I note that SNR's and Northstar's business options are supported by the underlying value of the spectrum they hold. Specifically, the capital structures of Northstar and SNR give the managing members a set of business options that extend well beyond the put options, which are exercisable at the end of years 5 or 6 of the license terms (i.e. exercisable on October 27, 2020 and for 90 days thereafter, and on October 27, 2021 and for 90 days thereafter). Because the SNR and Northstar capital structures have no near term debt maturities and allow entirely for payment in kind ("PIK") interest on the debt and for PIK dividends on the preferred equity, the managing members of these companies effectively have a runway of at least 10 years from the license date,[4] extending well beyond the exercise windows for their put options.

7) According to my estimate of the terms of the companies' put options, the proceeds if exercised at the end of 2020 would imply values for their respective spectrum assets of $2.66 per MHz POP for Northstar and $2.39 per MHz POP for SNR.[5] At the end

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[2] *See* Letter from Roger C. Sherman, Chief, WTB, to Ari Q. Fitzgerald, Counsel for SNR Wireless LicenseCo, LLC, 30 FCC Rcd 10704 (2015); Letter from Roger C. Sherman, Chief, WTB, to Mark F. Dever, Counsel for Northstar Wireless, LLC, 30 FCC Rcd 10700 (2015).

[3] *See supra* note 1.

[4] Even at the end of year 10, the debt balance, in my opinion, would be easily refinanceable given how low it is relative to the total value of the spectrum.

[5] The put prices are calculated using annual accretion rates of 20% each year through 2020, consistent with the year over year rates of change in DISH's balance sheet entries for the combined Northstar-SNR Redeemable Noncontrolling Interests, as reflected in DISH's 2017 10-

of 2021, the implied spectrum values would be $2.95 per MHz POP for Northstar and 2.65 per MHz POP for SNR. These values imply total (and annual) returns of 49% (7.0% annually) and 66% (7.6% annually) for Northstar and 53% (7.5% annually) and 70% (8.0% annually) for SNR in 2020 and 2021, relative to the gross prices initially paid for the spectrum.[6] If market values for the spectrum exceed those levels at the times the put options are exercisable, then SNR and Northstar would have economic interests in foregoing their respective puts in favor of pursuing their business options in order to realize the greater returns.

8) If the market values for the spectrum are at or near the values associated with the put prices around the time of the put option windows, then the managing members of SNR and Northstar would also need to consider the extent to which the values of the spectrum assets may rise further in years 7-10 (or later), providing a potentially greater return. Given the volatility in spectrum values at any point in time, there is no way to know with certainty which option will be the better or worse choice financially for the managing members of SNR and Northstar. Given that the PIK rates are 6% for the debt and 8% for the preferred equity, however, if spectrum values are at or near the put prices, then SNR's and Northstar's managing members need

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K and Q1 2018 10-Q and Q2 2018 10-Q. Note 2 to DISH's 2017 10-K explains that SNR's and Northstar's combined interests, consistent with GAAP accounting requirements, are carried at a value that reflects the sum of the equity capital invested in each of SNR and Northstar by their respective managing members, plus the fixed rate of return thereon associated with the put option as if exercised. The sum reflected on DISH's December 31, 2017 balance sheet for this total is $383.4 million, from which I inferred a split of $225.7 million and $157.7 million for Northstar and SNR managing members, based on the 58.9%/41.1% ratio of the capital invested in their respective companies (see Section 2.2 of their respective amended LLC agreements dated June 7, 2018).

[6] The imputed enterprise values for Northstar and SNR as of December 31, 2020 were $11.7 billion and $8.4 billion, respectively. They were determined by summing, respectively: (a) the March 31, 2018 debt balance for each of Northstar ($0.500B) and SNR ($0.500B), accreted through December 31, 2020 at the 6% per annum PIK interest rate, plus (b) the March 31, 2018 preferred equity balance for each of Northstar ($6.870B) and SNR ($5.065B), accreted at 12% through June 7, 2018 and then thereafter accreted through December 31, 2020 at the 8% PIK dividend rate, plus (c) an imputed total common equity capital amount for each of Northstar and SNR calculated by taking the managing members' respective December 31, 2020 put prices divided by 15% (with 15% representing the managing members' respective common equity interests in each of Northstar and SNR). The enterprise values are divided by the number of MHz POPs of spectrum won by each company. Note that to determine the 2021 amounts, the preceding methodology was applied to an additional year, accreting the put price at 20% in 2021. The revised Northstar and SNR LLC agreements dated June 7, 2018 indicate that the put accretion rate "will be reduced" from the rate used prior to 2021. Because the amount is redacted, the 2021 rate cannot be determined, and therefore, to be conservative, 20% was used for the calculations, even though that amount is overstated per the terms of the LLC agreements.

only conclude that spectrum values will be rising more than these fairly modest annual rates in order to make the rational decision not to exercise their respective put options.[7]

9) In my professional opinion and based on trends in the global market for spectrum, viable SNR and Northstar business options, other than exercising their put options, could include: (i) deploying a wireless network designed for enterprise or consumer applications and providing wireless network services directly or through partnerships with media, data, or other companies; (ii) offering access to the spectrum available under the SNR and/or Northstar FCC licenses via a spectrum sharing model, including spectrum leasing, with an existing wireless provider; and/or (iii) offering wireless network capacity or roaming on a wholesale basis to other providers or users of wireless network services.

10) My assessment of the viability of these business options is based primarily on the following considerations:

    a. Fundamentally, mobile traffic growth continues to be robust. Cisco, for example, forecasts 46% annual growth in wireless data traffic over the next three years.[8] Next generation 5G networks promise to have a positive disruptive effect that will expand the number of services and applications (such as broadband services to the home, traffic-intensive enterprise services, automotive, video surveillance, and many other IoT services) that critically depend on wireless networks for connectivity. These developments have positive implications for the wireless industry and the value of spectrum, as spectrum is the principal scarce resource required to generate wireless network capacity.

    b. The AWS spectrum band, including the AWS-3 spectrum licenses held by SNR and Northstar, is firmly established as a key capacity band for mobile voice and data services and will undoubtedly remain so, due to the scarcity of spectrum in mid-band frequencies with comparable propagation characteristics.

    c. The underlying economics driven by growth in wireless demand and scarcity of spectrum supply, both having already created considerable value in the AWS band to-date, will similarly drive value for SNR and Northstar in each of the various business options described above.

[7] Obviously if spectrum values exceed the put prices at the time the put options are exercisable then the managing members would not rationally choose to exercise the put right but would instead seek to monetize the spectrum in an alternative transaction or business plan.

[8] *See* Cisco, Cisco Visual Networking Index: Global Mobile Data Traffic Forecast, 2016-2021 White Paper (Sept. 15, 2017) (Between 2016 and 2021 mobile data traffic will grow at a compound annual growth rate of 46%, reaching 48.3 exabytes per month by 2021).

d. Significant value has already been created in this space for technology companies that are heavy users of wireless connectivity, such as Uber, Lyft, Apple, Facebook, and Netflix.

11) Worldwide spectrum prices have increased steadily since the introduction of the iPhone in 2007 and the ensuing proliferation of smartphones.[9] Further, a regression of U.S. low- and mid-band spectrum (including AWS spectrum) prices, measured against time from 2006 to 2017 and controlling for type of spectrum band, implies an average rate of growth in per MHz POP prices of 10% per annum.[10] By my calculations, if spectrum values were to continue increasing along this trend, SNR and Northstar would enjoy sufficient returns based on spectrum values alone to merit pursuing other business options in lieu of opting to exercise their put rights.

12) It is important to note that because SNR's and Northstar's agreements include put exercise windows after years five and six of their initial license grant (2020 and 2021), windows that provide for a minimum equity rate of return, spectrum price volatility actually works in SNR's and Northstar's favor. As with any standard option security, the losses or reductions in returns due to any unfavorable developments for spectrum values would be effectively capped, whereas potential gains from favorable developments would not. This asymmetry means that, the greater the variance in returns (i.e. spectrum volatility), the greater the return on equity SNR and Northstar can expect to realize; hence, SNR and Northstar have a stronger financial incentive to invest in the pursuit of their independent operating businesses and other options. It also means that, even if the value of AWS spectrum were not otherwise predicted to increase, the higher level of volatility, by itself, increases the likelihood that SNR's and Northstar's business returns by 2020 or 2021 will exceed those provided in the put rights.

13) U.S. spectrum prices have been volatile. This volatility stems from regulatory uncertainties, industry consolidation, the unpredictable timing and size of future spectrum allocations, spectrum clearing costs and potential impairment from legacy users, development of equipment ecosystems, technological improvements in spectral efficiency, and perhaps most critically the growth in demand for wireless capacity from new types of mobile applications and devices. Such uncertainties may serve to dampen spectrum values for periods of time, but can also lead to significant returns when these uncertainties are resolved.

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[9] *See* NERA Economic Consulting, Impact of Excessive Spectrum Prices: 3rd Annual Asia Pacific Spectrum Management Conference (May 2, 2017), http://www.nera.com/content/dam/nera/publications/2017/ASMC_APAC_Spectrum_pricing-Hans_Ihle.pdf.

[10] Data source: UBS U.S. Wireless Report, Figure 10: Spectrum Transaction Summary, September 19, 2018. Note that if the regression were based solely on mid-band transactions, the implied rate of growth in price per MHz POP would be higher.

14) Along these lines, with the transition to 5G having just begun, there is a high degree of uncertainty going forward about how the wireless industry will evolve and what effect that will have on spectrum prices. In particular, even small variances in the expected rate of traffic growth stimulated by new 5G applications and devices and the resulting changes in consumer demand will have a material impact on business models and the associated valuations of spectrum. Consequently, spectrum prices are likely to continue fluctuating as the rollout of 5G unfolds over the next five years.

15) SNR and Northstar already have another discernable potential spectrum value creation advantage. Approximately half of the SNR and Northstar AWS-3 spectrum acquisitions (as measured in MHz POPs) were for frequencies in the uplink-only (as mandated by the FCC) A1 and B1 bands, which sold at a significant discount in the AWS-3 auction relative to the AWS-3 paired bands. Specifically, the A1 and B1 spectrum sold for an average of $0.52/MHz POP, which is less than 20% of the $2.71/MHz POP average price paid for the paired spectrum (bands G, H, I, and J).

16) The A1/B1 unpaired spectrum entitles the holder to send signals only in one direction - from devices to towers (the uplink)—and not from towers to devices (the downlink). On the other hand, paired spectrum, as the name suggests, is partitioned into uplink and downlink sub-bands, enabling two-way communications. The holder of uplink-only spectrum would therefore need to have available downlink spectrum to pair up with the uplink spectrum to provide the standard two-way communication services. Consequently, the bidding on the uplink bands received relatively little competition, with the major incumbent mobile operators, Verizon, AT&T, T-Mobile and the regional carriers, showing little to no interest during the auction.[11]

17) In my opinion, the value of spectrum in these AWS-3 uplink-only bands has increased relative to the prices paid in the auction, because there is now a significant potential synergy as a result of the worldwide standards body 3GPP establishing Band 70 in June 2016. This new industry standard pairs the AWS-3 uplink spectrum with DISH's AWS-4 downlink spectrum, which together could enable a paired service offering similar capabilities and functionality to other paired bands with the same propagation characteristics. The ability to pair the AWS-3 uplink spectrum with the AWS-4 downlink spectrum makes the AWS-3 uplink spectrum inherently more attractive and valuable to potential business partners or purchasers.[12]

18) It is also worth noting that the paired AWS-3 spectrum, including the licenses owned by Northstar and SNR, is part of 3GPP Band 66. Band 66 is now supported by both Apple and Android smartphones.

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[11] A bidding entity owned by the satellite operator Terrestar, which held 8 MHz of spectrum in the 1400 MHz band that could potentially be paired with the AWS-3 B1 band, was the only bidder that provided competition to SNR and Northstar in the unpaired bands.

[12] The AWS-3 uplink spectrum could also potentially be paired with broadcast spectrum, which will be used by broadcasters for ATSC 3.0 downlink operations.

19) SNR and Northstar also have the benefit of a significant runway under their capital structures. As discussed above, the revised capital structure of both entities allows them to continue operating for at least 10 years from the date their FCC licenses were initially granted before having to engage in any refinancing transactions.[13]

20) Although the managing members of SNR and Northstar control the operations and business plans of the companies, DISH, like most passive investors, has limited consent rights regarding certain actions that the managing members may elect to take, including approval of the incurrence of significant debt, sale of the spectrum or liquidation of the company. This essentially gives the managing members the right to develop the spectrum and build their businesses for at least 10 years from the date their FCC licenses were initially granted, without requiring DISH's consent, including working with third parties to buildout and operate the spectrum. These consent rights, which are standard passive investor protection rights, do not change my opinion, expressed above, that Northstar and SNR will be able to engage in reasonable actions that maximize returns from their investment in spectrum.

21) Although the above considerations are sufficient to justify my conclusion regarding the viability of the potential business options stated above, the following considerations also support my conclusion:

    a. the potential for SNR and Northstar, which have complementary spectrum assets, to jointly deploy a national network or otherwise cooperate to reduce network deployment costs;[14] and

    b. the potential for SNR, Northstar and DISH, which itself possesses a nationwide footprint of AWS-4 and other spectrum, to jointly deploy a national network or otherwise cooperate to reduce network deployment costs.

I hereby declare, under penalty of perjury, that the foregoing statements are true and correct to the best of my knowledge and belief.

Executed this 22nd day of October, 2018.

/s/ Carlyn R. Taylor
Carlyn R. Taylor

[13] Nonetheless, as noted earlier, such refinancing should be readily achieved given the small amount of debt relative to underlying asset values.

[14] The collaboration of SNR, Northstar, and DISH was disclosed to the FCC as part of the applications filed by the parties in FCC Auction 97.

Exhibit C – Comparison of Restructuring Costs

COMPARISON OF RESTRUCTURING COSTS

Northstar Summary

With flawed calculations, VTel incorrectly concludes that "by the end of year 5" of Northstar's license term (*i.e.*, March 2, 2020), Northstar's debt and preferred equity obligations "would total $10.9 billion – a 21 percent increase compared to what it would have been under its original credit agreement (approximately $9 billion)."[1] In fact, correct calculations show that on March 2, 2020, Northstar debt and preferred equity obligations would total $8.622 billion (not the $10.882 billion asserted by VTel), representing a 6.8 percent (or $629 million) *reduction* compared to what it would have been under the original agreement ($9.251 billion). The fundamental error in VTel's calculation is that in the restructuring scenario, VTel inexplicably starts Year 1 with a starting balance of $7.4 billion for Northstar, which was the outstanding obligation as of March 31, 2018 when the restructuring took place (as shown below), and not the original March 2, 2015 starting balance of $5 billion.[2] In sum, VTel's calculation is off by a total of $2.478 billion (the difference between VTel's incorrect $1.849 billion stated increase and the correct $(629) million decrease in debt and preferred equity). Both VTel's incorrect calculations and the correct calculations are shown in the table below.

Table 1A – VTel's Illustrative 3/2/20 Northstar Forecast with VTel Errors Corrected

$ in Billions

Northstar Obligations (Debt and Preferred Equity)	3/31/18 Actual (1)	Incorrect VTel Calculations for 3/2/20 (2)	Correct Calculations for 3/2/20 (3)
Without the 3/31/18 Conversion of Debt to Preferred Equity			
Debt	7.370	9.033	9.251
Preferred Equity	-	-	-
Total (a)	7.370	9.033	9.251
After the 3/31/18 Conversion of Debt to Preferred Equity			
Debt	0.500	0.673	0.561
Preferred Equity	6.870	10.209	8.061
Total (b)	7.370	10.882	8.622
Change in Obligations as a Result of the 3/31/18 Conversion = (b) - (a)	**0.000**	**1.849**	**(0.629)**
% Change = ((b)-(a)) / (a)	**0.0%**	**20.5%**	**-6.8%**

Discussion Notes to Table Above

(1) The figures in this column reflect Northstar's conversion of $6.870 billion of debt to preferred equity on March 31, 2018[3].

(2) The figures in this column were provided by VTel in its "Appendix 2," specifically from the columns labeled "Year 5" and "Q4."[4] While VTel did not specify exact calendar date labels, it did identify its start date for the analysis as the date on which Northstar had $5.001 billion of debt[5] which in turn speaks to Northstar's March 2, 2015 post-auction payment date. Therefore, VTel's "Year 5" "Q4" is

[1] VTel Comments at 18 and Appendix 2.
[2] *See* VTel Comments at Appendix 2. The original starting balance of $5 billion was disclosed in the DISH 2014 Annual Report. *See* DISH NETWORK CORPORATION, Annual Report (Form 10-K), p. 9 (Feb. 23, 2015).
[3] Northstar LLC Agreement at 2.2(e).
[4] VTel Comments at Appendix 2.
[5] Northstar Submission on Remand at Attachment 5.

interpreted as the fifth anniversary of the March 2, 2015 date, or March 2, 2020, as labeled in this table column.

(3) The calculations in this column are from Table 2A that follows. Note that these calculations illustratively assume that debt and preferred equity accrete at their respective 6 percent and 8 percent rates in order to parallel VTel's methodology. However, these illustrative calculations are used to correct VTel's calculation and should not be construed to represent Northstar's actual forecasts.

COMPARISON OF RESTRUCTURING COSTS

Table 2A – Supporting Details for Northstar Table 1A

$ in Billions

Nortstar Obligations	Actual	2018			2019				2020				
(Debt and Preferred Equity)	3/31/18	Jun-30	30-Sep	Dec-31	Mar-31	Jun-30	30-Sep	Dec-31	Mar-2	Mar-31	Jun-30	30-Sep	15-Dec
Without the 3/31/18 Conversion of Debt to Preferred Equity (1)													
Debt	7.370	7.592	7.820	8.055	8.296	8.545	8.802	9.066	9.251	9.338	9.618	9.906	10.152
Preferred Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (a)	7.370	7.592	7.820	8.055	8.296	8.545	8.802	9.066	9.251	9.338	9.618	9.906	10.152
After the 3/31/18 Conversion of Debt to Preferred Equity (1)													
Debt	0.500	0.508	0.515	0.523	0.531	0.539	0.547	0.555	0.561	0.563	0.572	0.580	0.587
Preferred Equity	6.870	7.062	7.203	7.347	7.494	7.644	7.797	7.953	8.061	8.112	8.274	8.439	8.579
Total (b)	7.370	7.569	7.718	7.870	8.025	8.183	8.344	8.508	8.622	8.675	8.846	9.020	9.166
Change in Obligations (b)-(a)	**(0.000)**	**(0.023)**	**(0.102)**	**(0.185)**	**(0.272)**	**(0.363)**	**(0.458)**	**(0.558)**	**(0.629)**	**(0.663)**	**(0.772)**	**(0.886)**	**(0.985)**
% Change = ((b)-(a)) / (a)	**0.0%**	**-0.3%**	**-1.3%**	**-2.3%**	**-3.3%**	**-4.2%**	**-5.2%**	**-6.2%**	**-6.8%**	**-7.1%**	**-8.0%**	**-8.9%**	**-9.7%**

Discussion Notes to Table Above

(1) The calculations in this table illustratively assume that (i) in the "Without the 3/31/18 Conversion" illustration debt accretes at a 12 percent rate, and (ii) in the "After the 3/31/18 Conversion" illustration (a) debt accretes at 6 percent and (b) preferred equity accretes at 12 percent through 6/7/18 and then 8 percent in order to parallel VTel's methodology. However, these illustrative calculations are used to correct VTel's calculation and should not be construed to represent Northstar's actual forecasts.

COMPARISON OF RESTRUCTURING COSTS

Table 3A – VTel's Appendix 1 Northstar Table with VTel Errors Corrected

$ in Billions

	VTEL Incorrect Calculations				Correct Calculations			
	3/2/15 (Year 1)		3/2/25 (Year 10)		3/2/15 (Year 1)		3/2/25 (Year 10)	
	Investment	Ownership	Investment	Ownership	Investment	Ownership	Investment	Ownership
Northstar Interest	**$**	**%**	**$**	**%**	**$**	**%**	**$**	**%**
Preferred Equity (1)(2)	6.870	87.3%	15.170	93.8%	-	NA	11.978	NA
Common Equity:								
Northstar Manager (2)(3)	0.150	1.9%	0.150	0.9%	0.132	15.0%	0.132	15.0%
DISH (2)(3)	0.850	10.8%	0.850	5.3%	0.750	85.0%	0.750	85.0%
Total	1.000	12.7%	1.000	6.2%	0.883	100.0%	0.883	100.0%
Total Ownership Interests	7.870	100.0%	16.170	100.0%	0.883	100.0%	0.883	100.0%

Discussion Notes to Table Above

(1) VTel incorrectly calculates that the preferred equity would accrete to $15.170 billion by 3/2/25,[6] which overstates by $3.192 billion, or 27 percent, the correct amount of $11.978 billion. However, these illustrative calculations are used to correct VTel's calculation and should not be construed to represent Northstar's actual forecasts.

(2) VTel incorrectly shows the preferred equity as having an ownership interest in Northstar, in turn diluting the common equity ownership. In fact, the preferred equity has no (or zero percent) ownership interest in the common equity. Northstar Manager, LLC owns a 15 percent equity interest in Northstar and DISH owns an 85 percent equity interest in Northstar, neither of which is diluted by the preferred equity.

(3) VTel incorrectly shows the common equity investment amounts by Northstar Manager and DISH.

[6] VTel Comments at Appendix 1.

COMPARISON OF RESTRUCTURING COSTS

SNR Summary

VTel makes comparable mistakes regarding SNR, finding that "SNR's total liability to DISH in year five, including both preferred equity and debt, would total $8.2 billion, as compared to $6.5 billion in debt under its original credit agreement – an increase of approximately 26 percent."[7] In fact, correct calculations show that on March 2, 2020, SNR debt and preferred equity obligations would total $6.501 billion (not the $8.200 billion asserted by VTel), representing a 6.9 percent (or $484 million) reduction compared to what it would have been under the original agreement (approximately $6.985 billion). The fundamental error in VTel's calculation is that in the restructuring scenario, VTel inexplicably starts Year 1 with a starting balance of $5.6 billion for SNR, which was the outstanding obligation as of March 31, 2018 when the restructuring took place (as shown below), and not the original March 2, 2015 starting balance of $3.6 billion.[8] In sum, VTel's calculation is off by a total of $2.172 billion (the difference between VTel's incorrect $1.688 billion stated increase and the correct $(484) million decrease in debt and preferred equity). Both VTel's incorrect calculations and the correct calculations are shown in the table below.

Table 1B – VTel's Illustrative 3/2/20 SNR Forecast with VTel Errors Corrected

$ in Billions

SNR Obligations (Debt and Preferred Equity)	3/31/18 Actual (1)	Incorrect VTel Calculations for 3/2/20 (2)	Correct Calculations for 3/2/20 (3)
Without the 3/31/18 Conversion of Debt to Preferred Equity			
Debt	5.565	6.512	6.985
Preferred Equity	-	-	-
Total (a)	5.565	6.512	6.985
After the 3/31/18 Conversion of Debt to Preferred Equity			
Debt	0.500	0.673	0.561
Preferred Equity	5.065	7.527	5.940
Total (b)	5.565	8.200	6.501
Change in Obligations as a Result of the 3/31/18 Conversion = (b)	**-**	**1.688**	**(0.484)**
% Change = ((b)-(a)) / (a)	**0.0%**	**25.9%**	**-6.9%**

Discussion Notes to Table Above

(1) The figures in this column reflect SNR's conversion of $5.065 billion of debt to preferred equity on March 31, 2018.[9]

(2) The figures in this column were provided by VTel in its "Appendix 2," specifically from the columns labeled "Year 5" and "Q4."[10] While VTel did not specify exact calendar date labels, it did identify its

[7] VTel Comments at 18 and Appendix 2.

[8] *See* VTel Comments at Appendix 2. More precisely, the amount DISH loaned to SNR as of March 2, 2015 was approximately $3.503 billion (not $3.6 billion), but the difference is immaterial for this analysis and does not change the fact that VTel's analysis is flawed. *See* DISH NETWORK CORPORATION, Annual Report (Form 10-K), p. 10 (Feb. 23, 2015).

[9] SNR LLC Agreement at 2.2(e).

[10] VTel Comments at Appendix 2.

start date for the analysis as March 2, 2015.[11] Therefore, "Year 5" "Q4" is interpreted as the fifth anniversary of the March 2, 2015 date, or March 2, 2020, as labeled in this table column.

(3) The calculations in this column are from Table 2B that follows. Note that these calculations illustratively assume that debt and preferred equity accrete at their respective 6 percent and 8 percent rates in order to parallel VTel's methodology. However, these illustrative calculations are used to correct VTel's calculations and should not be construed to represent SNR's actual forecasts.

[11] *Id.*

COMPARISON OF RESTRUCTURING COSTS

Table 2B – Supporting Details for SNR Table 1B

$ in Billions

SNR Obligations	Actual	2018			2019				2020				
(Debt and Preferred Equity)	3/31/18	Jun-30	30-Sep	Dec-31	Mar-31	Jun-30	30-Sep	Dec-31	Mar-2	Mar-31	Jun-30	30-Sep	15-Dec
Without the 3/31/18 Conversion of Debt to Preferred Equity (1)													
Debt	5.565	5.732	5.904	6.081	6.264	6.452	6.645	6.845	6.985	7.050	7.262	7.479	7.665
Preferred Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (a)	5.565	5.732	5.904	6.081	6.264	6.452	6.645	6.845	6.985	7.050	7.262	7.479	7.665
After the 3/31/18 Conversion of Debt to Preferred Equity (1)													
Debt	0.500	0.508	0.515	0.523	0.531	0.539	0.547	0.555	0.561	0.563	0.572	0.580	0.587
Preferred Equity	5.065	5.204	5.308	5.414	5.523	5.633	5.746	5.861	5.940	5.978	6.097	6.219	6.322
Total (b)	5.565	5.712	5.823	5.937	6.053	6.172	6.292	6.415	6.501	6.541	6.669	6.800	6.909
Change in Obligations (b)-(a)	**-**	**(0.021)**	**(0.081)**	**(0.144)**	**(0.211)**	**(0.280)**	**(0.353)**	**(0.429)**	**(0.484)**	**(0.509)**	**(0.593)**	**(0.680)**	**(0.755)**
% Change = ((b)-(a)) / (a)	**0.0%**	**-0.4%**	**-1.4%**	**-2.4%**	**-3.4%**	**-4.3%**	**-5.3%**	**-6.3%**	**-6.9%**	**-7.2%**	**-8.2%**	**-9.1%**	**-9.9%**

Discussion Notes to Table Above

(1) The calculations in this table illustratively assume that (i) in the "Without the 3/31/18 Conversion" illustration debt accretes at a 12 percent rate, and (ii) in the "After the 3/31/18 Conversion" illustration (a) debt accretes at 6 percent, and (b) preferred equity accretes at 12 percent through 6/7/18 and then 8 percent in order to parallel VTel's methodology. However, these illustrative calculations are used to correct VTel's calculation and should not be construed to represent SNR's actual forecasts.

COMPARISON OF RESTRUCTURING COSTS

Table 3B – VTel's Appendix 2 SNR Table with VTel Errors Corrected

$ in Billions

	VTEL Incorrect Calculations				Correct Calculations			
	3/2/15 (Year 1)		3/2/25 (Year 10)		3/2/15 (Year 1)		3/2/25 (Year 10)	
SNR Interest	Investment $	Ownership %	Investment $	Ownership %	Investment $	Ownership %	Investment $	Ownership %
Preferred Equity (1)(2)	5.065	83.5%	11.185	91.8%	-	NA	8.827	NA
Common Equity:								
SNR Wireless Management (2)(3)	0.150	2.5%	0.150	1.2%	0.093	15.0%	0.093	15.0%
DISH (2)(3)	0.850	14.0%	0.850	7.0%	0.524	85.0%	0.524	85.0%
Total	1.000	16.5%	1.000	8.2%	0.617	100.0%	0.617	100.0%
Total Ownership Interests	6.065	100.0%	12.185	100.0%	0.617	100.0%	0.617	100.0%

Discussion Notes to the Table Above

(1) VTel incorrectly calculates that the preferred equity would accrete to $11.185 billion by 3/2/25,[12] which overstates by $2.358 billion, or 27 percent, the correct amount of $8.827 billion. However, these illustrative calculations are used to correct VTel's calculation and should not be construed to represent SNR's actual forecasts.

(2) VTel incorrectly shows the preferred equity as having an ownership interest in SNR, in turn diluting the common equity ownership. In fact, the preferred equity has no (or zero percent) ownership interest in the common equity. SNR Wireless Management, LLC owns a 15 percent equity interest in SNR and DISH owns an 85 percent equity interest in SNR, neither of which is diluted by the preferred equity.

(3) VTel incorrectly shows the common equity investment amounts by SNR Wireless Management and DISH.

[12] VTel Comments at Appendix 1.

CERTIFICATE OF SERVICE

I, Matthew G. Baker, certify that on October 22, 2018, a true and correct copy of the foregoing Consolidated Opposition and Associated Materials was sent by electronic mail (+) and/or United States mail, first-class postage prepaid (*) to the following:

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† None of these petitioners included in its Petition an address for service of this document. The physical addresses set forth here are based solely on information and belief after conducting a reasonable search and Attachment A of the *Remand Order*

/s/ Matthew G. Baker
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